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ABSTRACT

This research bulletin includes reports of research on children either in progress or recently completed during the period of September 1976 through February 1977. Each entry includes information concerning the investigators, purpose, subjects, methods, duration, cooperating groups and findings (if available). Reports are listed under the following headings: (1) Long-Term Research, (2) Growth and Development, (3) Special Groups of Children, (4) The Child in the Family, (5) Socioeconomic and Cultural Factors, (6) Educational Factors and Services, (7) Social Services and (8) Health Services. The bulletin also includes a selective bibliography on moral development which lists relevant ERIC documents, books, journal articles and pamphlets. (BD)

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RESEARCH RELATING TO CHILDREN

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Bulletin 38

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NOTES: *Research Relating to Children* is prepared by the ERIC Clearinghouse on Early Childhood Education under the direction of Lilian G. Katz, Ph.D. Investigators who wish to submit abstracts of their research projects should address correspondence to:

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PREFACE

Research Relating to Children, Bulletin 38 includes reports of research in progress or recently completed research. With the exception of the section on Long-Term Research, it does not repeat studies included in *Bulletins 3* through *37* even though they are still in progress. This issue, therefore, does not reflect all research relating to children, but only research reported to us from September 1976 through February 1977.

In addition to reports of current research, *Bulletin 38* contains *Moral Development: A Bibliography,* which updates previous ERIC Clearinghouse on Early Childhood Education bibliographies on the subject. The bibliographic sources include ERIC documents, journal articles, books, book reviews, and conference papers that we hope you will find useful.

Publication references and plans are cited in the abstracts of research in the bulletin. The Clearinghouse, however, does not maintain information on the publications of the investigators. If you wish to obtain further details about any of the projects, please check professional journals in the appropriate field or write directly to the investigator.

We wish to thank investigators who have submitted reports of their research and those who have informed us of other studies. We wish to acknowledge the valuable assistance of the Social Research Group, George Washington University and the foundations that provided us with information about their research grants.

Lilian G. Katz, Ph.D.
Director
ERIC Clearinghouse on Early Childhood Education

To Research Investigators:

This publication is only as complete as you are willing to make it. On page 173 you will find a form for reporting your current research. On page 177 you will find a form to let us know of other investigators who are working in the field. Please let us hear from you.

Research Relating to Children
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MORAL DEVELOPMENT:
A BIBLIOGRAPHY

This selective bibliography on moral development is divided into five sections: (1) ERIC documents, (2) journal articles, (3) books, (4) book reviews, and (5) conference papers.

Citations of ERIC documents (denoted by ED numbers) appeared in *Research in Education*, and citations of journal articles appeared in *Current Index to Journals in Education, Psychological Abstracts,* and *Social Science Index* from November 1975 through January 1977. Books and journal articles are available in public libraries. Availability for conference papers is cited in the bibliography. ERIC documents may be ordered from:

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ERIC studies may be ordered on microfiche (MF) or on hard copy (HC). To read MF (a transparent film card), use a microfiche reader available in most libraries. HC is a photocopy of the original document.

Major descriptors (marked with asterisks) and minor descriptors appear under each citation. Descriptors with asterisks denote the document's major subject matter; terms without asterisks suggest topics of lesser import that are covered in the document.

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LONG-TERM RESEARCH

Note: The reports in this section concern research programs that are continuous.

38-AA-1 LONGITUDINAL STUDY OF CHILD GROWTH AND DEVELOPMENT

Investigator(s): Frank Falkner, M.D., F.R.C.P., Director; Alexander F. Roche, M.D., Ph.D., Chief, Section on Physical Growth and Genetics; and Robert McCall, Ph.D., Chief, Section on Perceptual/Cognitive Development, Fels Research Institute for the Study of Human Development, 800 Livermore Street, Yellow Springs, Ohio 45387.
Purpose: To conduct a multidisciplinary study of children whose health, growth, psychological development, and environment have been studied since birth, with prenatal and genetic information; and to determine normative patterns of growth and development in human subjects.
Subjects: Over 800 subjects: from present infants to adults with their children in study. The subjects are healthy, from rural and urban areas, and from upper-lower to middle class backgrounds.
Methods: A multidisciplinary longitudinal study is being conducted with regular visits and use of appropriate analysis and computer methodology.
Duration: 1930-continuing.
Cooperating group(s): (1) Public Health Service, U.S. Department of Health, Education, and Welfare. (2) National Science Foundation. (3) Samuel S. Fels Fund. (4) U.S. Air Force.
Publications: Information is available from the investigators on approximately 1,022 publications that have been completed to date.

38-AA-2 DEVELOPMENT OF BUDGETS FOR CLOTHING AND HOUSEHOLD TEXTILES

Investigator(s): Virginia Britton, Ph.D., Home Economist, Consumer and Food Economics Institute, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building No. 1, Hyattsville, Maryland 20782.
Purpose: To develop and update current household clothing budgets taking into account known physiological and sociopsychological needs, clothing habits, income, and other resources of various population groups, and the prices and availability of clothing items.
Subjects: 12,000 children in 6,000 families with husband and wife and one to five children, but with no other persons living in the home.
Methods: Data were gathered from the 1960-61 Survey of Consumer Expenditures by the Bureau of Labor Statistics and the U.S. Department of Agriculture. Budgets for children were computed using regression methods for three economic levels of the USDA food plans—economy, low cost, and moderate cost. Separate clothing budgets were computed for boys and girls categorized by age, region, and urbanization. Budgets will be published as total expenditures for children's clothing (updated to current price levels) and in garment equivalent units.

Findings: Budget costs for boys tended to equal comparable budgets for girls at the economy level. However, at higher budget levels, boys' costs were substantially less than girls' budgets. This was especially true for older children. Cost differences between clothing budget levels were substantially greater than between food plans, reflecting the greater elasticity of clothing expenditures. The majority of farm budgets and rural nonfarm budgets was about equal to the comparable urban budgets.
Duration: 1962-continuing.
Publications: Britton, V. Clothing budgets for children from the USDA: Annual costs at three levels in four regions. *Home Economics Research Journal,* March 1973, 1(3), 173-184. (Reprints are available from: Sales Office, American Home Economics Association, 2010 Massachusetts Avenue, N.W., Washington, D.C. 20036. Price $1.00.)

38-AA-3 CHILD HEALTH AND DEVELOPMENT STUDIES

Investigator(s): Bea J. van den Berg, Ph.D., Research Pediatrician, School of Public Health, University of California, Berkeley, California 94720; Stephen Thomas, M.D., Director, Department of Obstetrics and Gynecology; and Edgar Schoen, M.D., Director, Department of Pediatrics, Kaiser Foundation Hospital, Oakland, California 94611.
Purpose: To investigate the relationships of biologic, genetic, and medical and environmental factors in the parents (including events in pregnancy, labor, and delivery) to the normal and abnormal development of the offspring; and to investigate the relationships of these factors to pregnancy loss in the form of early fetal death, perinatal mortality, infant and childhood mortality, and to incidence of congenital anomalies, to growth and morbidity patterns in infancy and childhood, and to cognitive attainment, behavioral development, and physical characteristics at ages 5 and 10 years.
Subjects: Members of the Kaiser Foundation Health Plan (a prepaid medical health plan) who reside in the San Francisco-East Bay Area.
Methods: The method of study is longitudinal for both mother and child. In addition to information obtained specifically for the studies, the medical records for the gravida and child provided information on illnesses, injuries, and drugs. A special interview and developmental examination were given the child on his 5th birthday and to a large sample of children when they were ages 9 to 11. These include vision, hearing, speech, and tests of cognitive ability. It is planned to extend the observations with a follow-up examination of a subcohort of about 2,000 mothers and their children when the latter are about 16 years old. An epidemiological research project is in process, aimed at the identification of precursory factors for high blood pressure in young persons.
Duration: July 1959-continuing.
Publications: Copies of a publication list and reprints are available from: Child Health and Development Studies, 3867 Howe Street, Oakland, California 94611.

38-AA-4 THE BERKELEY, CALIFORNIA GROWTH STUDY

Investigator(s): Dorothy H. Eichorn, Ph.D., Research Psychologist, Institute of Human Development, University of California, Berkeley, Calfornia 94720.
Purpose: To study the mental and physical growth of normally healthy persons from birth to the present.

Subjects: 60 full-term, healthy newborns, born in Berkeley hospitals from 1928 to 1929 of white, English-speaking parents; and 140 offspring of these subjects, ages birth to 20, seen irregularly.

Methods: The same data, appropriate for age, were collected for the subjects and their offspring. Beginning in the first week of life, tests of mental and motor development, pediatric examinations, and interviews were conducted at frequent intervals during growth. At all visits, inquiries were made concerning current health and recent illnesses. Anthropometrics, body photographs, and skeletal X-rays were taken at most ages. Socioeconomic data were collected. Studies of the physical aspects of growth include analyses that compare health histories with physical growth and with skeletal maturation. Emotional and other personality variables are being studied for consistency, and in various interrelations with maternal behavior in infancy, birth histories, socioeconomic status, and intellectual and physical growth.

Duration: 1928-continuing.

Publications: (1) *American Psychologist,* 1968, 23(1), 1-17. (2) *Monograph of the Society for Research in Child Development,* 1963, 28. (3) Bayer, Leona and Bayley, Nancy. *Growth diagnosis: Selected methods for interpreting and predicting physical development from one year to maturity.* Chicago: University of Chicago Press, 1959.

38-AA-5 GROWTH AND PSYCHOPHYSIOLOGICAL PATTERNS IN INFANCY

Investigator(s): Wagner H. Bridger, M.D., Associate Professor of Psychiatry; and Beverly Birns, Ph.D., Assistant Professor of Psychology, Albert Einstein College of Medicine, Yeshiva University, Bronx, New York 10461.

Purpose: To investigate the origins and course of development of individual differences in neonates.

Subjects: Normal, healthy, full-term babies, 2 to 5 days old, born at Bronx Municipal Hospital Center.

Methods: A neonatal behavioral profile, which was established in previous studies, will be used. The profile includes behavioral and heart rate ratings on excitation, soothing, feeding, sleep, and nonstimulus periods of observation. Neonates will be followed at ages 2 weeks, and 1, 2, 3, and 4 months to measure the stability of early appearing traits and their relation to later behaviors. Data will be analyzed with respect to stability of early appearing behaviors and the relationship between neonatal behavior and maternal and birth history.

Duration: 1966-continuing.

Cooperating group(s): National Institute of Mental Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: (1) Newton, Grant and Levine, Seymour (Eds.) *Early experience and behavior: Psychobiology of development.* Springfield, Illinois: Charles C Thomas, 1968. (2) *Psychosomatic Medicine,* 1966, 28, 316.

38-AA-6 LONGITUDINAL STUDY OF DENTOFACIAL, SKELETAL, AND PHYSICAL GROWTH, AND NUTRITION OF CHILDREN

Investigator(s): Bhim S. Savara, D.M.D., M.S., Chairman, Child Study Clinic, School of Dentistry, Health Sciences Center, University of Oregon, Portland, Oregon 97201.

Purpose: To study the dentofacial growth of children, assessment of skeletal age related to facial growth, and variations in physique and its effect on dentofacial growth; and to determine heritable traits.

Subjects: 420 children, including 40 pairs of twins, ages 3 to 20. 300 children have been observed for more than 15 years.

Methods: Cephalograms, hand, wrist, and calf X-rays, intraoral X-rays, study casts, anthropometric measurements, and photographs are taken; and oral examinations are administered to the subjects. Children are examined every 6 months until they are 14 years old.

Findings: See publication references listed below.

Duration: 1950-continuing.

Cooperating group(s): (1) University of Oregon Health Sciences Center, School of Dentistry. (2) National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: *Angle Orthodontist,* 1968, 38, 104-120; *American Journal of Orthodontics,* 1969, 55, 133-153; *American Journal of Physical Anthropology,* 1969, 30(2), 315-318; *Bulletin of the Academy of General Dentistry,* June 1969, 27-31; *Journal of Dentistry for Children,* November-December 1969, 1-4; *American Journal of Orthodontics,* 1970, 57(6), 561-572; *Journal of Dental Research,* 1970, 49(4), 885; *Advances in Oral Biology,* New York: Academic Press, Inc., 1970. Pp. 1-9; *Journal of the American Dental Association,* 1970, 81, 653-661; *Oral Health,* 1971, 61(10), 19-28; *American Journal of Orthodontics,* 1971, 59(5), 488-500; *Symposium on Close-Range Photogrammetry.* Urbana: University of Illinois, 1971. Pp. 365-369; *Angle Orthodontist,* 1972, 42(1), 35-43; *American Journal of Orthodontics,* 1972, 61(3), 231-245; *American Journal of Orthodontics,* 1972, 61(4), 345-352; *Cleft Palate Journal,* 1972, 9(2), 119-131; *American Journal of Orthodontics,* 1972, 61(6), 603-618; *Angle Orthodontist,* 1973, 43(2), 207-215; *American Journal of Orthodontics,* 1973, 63(6), 610-621; *American Journal of Physical Anthropology,* 1973, 39, 49-56; *American Journal of Orthodontics,* 1973, 64(3), 248-257; *American Journal of Orthodontics,* 1974, 66(5), 479-486; *Human Biology,* 1974, 46(4), 693-698.

38-AA-7 NEW RADIOGRAPHIC STANDARDS OF REFERENCE FOR SKELETAL DEVELOPMENT OF CHILDREN AND STANDARDS IN PREPARATION

Investigator(s): S. Idell Pyle, Ph.D., Research Associate in Anatomy, School of Medicine, Case Western Reserve University, Cleveland, Ohio 44106; William W. Greulich, Ph.D., Research Biologist, National Institute of Child Health and Human Development, Bethesda, Maryland 20014; and staff of the National Center for Health Statistics involved in the National Health Survey, Public Health Service, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201.

Purpose: To develop radiographic standards of reference for skeletal development of children to provide a basis for identifying maturity levels of growing bones in the hands, elbows, shoulders, hips, knees, and feet of children and youths according to the shapes of the bone shadows in an X-ray film.

Subjects: Approximately 1,000 healthy individuals in Cleveland and Boston.

Methods: The bone shadows in an X-ray film display a modal rate of growth of each bone by illustrating regularly occurring osseous features which develop in series in the

surface of the bone cortex as it calcifies. A reference standard consists of films arranged as a series to show sequential osseous features which are alike in males and females. It is an instrument for measuring the skeletal maturity level of children. Films of the subjects, covering the full span of growth from birth to adulthood, have been used to prepare standards. A standard of reference for joints in the upper extremity is in preparation, with the section on the hand and wrist showing the application of cardinal maturity indicators of individual bones to handwrist bones which are anomalous in the number of their bone growth centers. For published standards, see publication references listed below.

Duration: 1948-continuing.

Cooperating group(s): Bolton-Brush Growth Study Center, Case Western Reserve University, Cleveland; Department of Maternal and Child Health, Harvard University School of Public Health, Boston; National Center for Health Statistics, Rockville, Maryland; Departments of Pediatrics and Endocrinology, Henry Ford Hospital, Detroit; Merrill-Palmer Institute, Detroit; Department of Education, Eastern Michigan University, Ypsilanti.

Publications: (1) Greulich, W. W. and Pyle, S. I. *A radiographic atlas of skeletal development of the hand and wrist* (2nd Ed.) Stanford, California: Stanford University Press, 1959. (2) Hoerr, N. L.; Pyle, S. I.; and Francis, C. C. *A radiographic atlas of skeletal development of the foot and ankle* (1st Ed.) Springfield, Illinois: Charles C Thomas, 1962. (3) Pyle, S. I. and Hoerr, N. L. *A standard of reference for the growing knee* (2nd Ed.) Springfield, Illinois: Charles C Thomas, 1969. (4) Pyle, S. I.; Waterhouse, A. M.; and Greulich, W. W. *A standard of reference for the growing hand and wrist* (1st Ed.) Cleveland, Ohio: The Press of Case Western Reserve University, 1971.

38-AA-8 METHODS IN CHARACTER DEVELOPMENT

Investigator(s): Ernest M. Ligon, Ph.D., Director; and staff, Union College Character Research Project, 10 Nott Terrace, Schenectady, New York 12308.

Purpose: To develop more effective methods in character development in cooperation with families and character training agencies. ("Character" is defined in terms of three dimensions: philosophy of values, breadth of social vision, and strength of purpose.)

Subjects: Children and families throughout the United States. The families belong to churches, YMCAs, and schools but participate in the study as individual families.

Methods: Procedures of the research are based on action research, in which the participants cooperate with the laboratory and use methods of coscientist research. Open-ended reports on research goals constitute the basic body of research data. An analysis of these data serves as the basis for the development of new procedures and for the scientific reports that are published concerning it.

Findings: Reports have been prepared concerning hypotheses tested in the home and character building agencies. Most of the findings relate to the home, learning, decision making, and methods for character development, plus descriptions of age level potentials, especially for decision making.

Duration: 1935-continuing.

Cooperating group(s): Lilly Endowment, Inc.

Publications: Catalog: *Attitude Education and Character Development,* which lists 44 publications and includes a price list, is available from the investigator.

38-AA-9 LONGITUDINAL GROWTH STUDIES OF CHILDREN WITH CRANIOFACIAL BIRTH DEFECTS

Investigator(s): Samuel Pruzansky, D.D.S., Director, Center for Craniofacial Anomalies, Medical Center, University of Illinois, P.O. Box 6998, Chicago, Illinois 60680.
Purpose: To study the epidemiology, genetics, morphology, physiology, and postnatal development of children; and to plot the natural history of children with craniofacial birth defects.
Subjects: Over 3,000 subjects, males and females, from infancy to adulthood.
Methods: The subjects were initially studied as infants. Procedures included roentgenocephalometry, tomography, dental casts, and photographs. Speech and hearing, psychosocial, and pediatric evaluations supplied additional information.
Findings: Patterns of growth have been delineated that are useful in clinical management. Some conditions have been shown to get worse; some show spontaneous improvement; and others remain unchanged. Syndrome-specific cranial morphologies have been described and genetic significance has been described.
Duration: 1949-continuing.
Cooperating group(s): (1) Illinois State Pediatric Institute. (2) Division of Services for Crippled Children, University of Illinois. (3) Cook County Children's Hospital. (4) Division of Research; Maternal and Child Health Services; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (5) National Institute of Dental Research; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.
Publications: *Cleft Palate Journal,* 1971, 8, 239. A list of articles in journals of dentistry, medicine, public health, speech and hearing, and psychology is available from the investigator.

38-AA-10 NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)

Investigator(s): J. Stanley Ahmann, Ph.D., Project Director; Roy Forbes, Ed.D., Project Director; and George Johnson, Ph.D., Associate Project Director, National Assessment of Educational Progress, 700 Lincoln Tower, 1860 Lincoln Street, Denver, Colorado 80203.
Purpose: To obtain census-like data on the knowledge, skills, concepts, understandings, and attitudes possessed by young Americans; and to measure the growth or decline in educational attainments that occur over time in the 10 learning areas assessed.
Subjects: 27,000 subjects annually in each age group: 9, 13, and 17 (including high school dropouts and early graduates); and 5,000 young adults annually, ages 26 to 35.
Methods: The National Assessment of Educational Progress is an annual national survey that assesses 10 learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies, and writing. Three areas have been assessed twice: science (1969-70 and 1972-73); writing (1969-70 and 1973-74); and reading (1970-71 and 1974-75). The four age levels assessed were selected to correspond to the end of primary, intermediate, secondary, and postsecondary education. A national probability sample of approximately 2,500 to 2,600 individuals per group administered package, and a sample of 2,100 to 2,200 individuals per individually adminstered package are assessed annually. The samples are designed to allow NAEP to estimate the performance of the population for that age level. Students in school are assessed in small groups up to 12, or in some cases, in individual interviews. Paper and pencil questions, discussions, and actual tasks to perform are included among the exer-

cises. Adults are interviewed individually at home, and 17-year olds who are out of school also respond to exercises individually. Results are reported for about 50 percent of the exercises given each year and are stated in percentages of people responding correctly or incorrectly. Results are reported nationally and for geographic region, size and type of community, age, sex, race, and parental education.

Duration: 1969-continuing.

Cooperating group(s): (1) National Center for Educational Statistics; U.S. Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (2) Carnegie Corporation. (3) Ford Foundation's Fund for the Advancement of Education. (4) Research Triangle Institute. (5) Measurement Research Center. (6) Education Commission of the States.

Publications: The National Assessment Publications List is available from: Education Commission of the States, 300 Lincoln Tower, 1860 Lincoln Street, Denver, Colorado 80203.

38-AA-11 COLLABORATIVE STUDIES IN CEREBRAL PALSY AND OTHER NEUROLOGICAL AND SENSORY DISORDERS OF INFANCY AND CHILDHOOD

Investigator(s): Joseph S. Drage, M.D., National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Public Health Service, U.S. Department of Health, Education, and Welfare, Bethesda, Maryland 20014.

Purpose: The Collaborative Perinatal Project (CPP) is a longitudinal multidisciplinary research effort which seeks leads to the etiologies of cerebral palsy, mental retardation, learning disorders, congenital malformations, minimal brain dysfunction, convulsive disorders, and communicative disorders through studies which relate the events, conditions, and abnormalities of pregnancy, labor, and delivery to the neurological and mental development of the children of these pregnancies.

Subjects: During a period from 1959 through 1966, detailed research data were obtained from 50,000 women during pregnancy, labor, and delivery. The children born to these 50,000 women during their participation in the CPP have been examined at specific intervals up to the child's 8th birthday to identify abnormal conditions which might limit the child's ability to reach maximum developmental potential.

Methods: A comprehensive analysis of the data will investigate the complex interactions between the child's condition and the antecedent factors which may have contributed to the condition. The analysis of this data is underway within the National Institutes of Health, within other governmental agencies, and under contract with teams of investigators at medical centers outside of government. The Perinatal Research Branch and the National Institute of Neurological and Communicative Disorders and Stroke have the responsibility for monitoring, coordinating, and administering the overall research effort. The goal of this effort is to make a series of publications available to the research community and the general public. The projected completion of this analysis is June 30, 1976. The data for the CPP were collected at 12 major medical centers in the United States.

Duration: 1956-continuing.

Cooperating group(s): Charity Hospital, New Orleans, Louisiana; Johns Hopkins University School of Medicine, Baltimore, Maryland; Boston Lying-In Hospital, Children's Medical Center, and Harvard University (Warren Anatomical Museum), Boston, Massachusetts; University of Minnesota Medical School, Minneapolis, Minnesota; Columbia-Presbyterian Medical Center, New York, New York; Children's Hospital of Buffalo, Buffalo, New York; University of Oregon Medical School, Portland, Oregon;

Children's Hospital of Philadelphia and Pennsylvania Hospital, Philadelphia, Pennsylvania; Brown University, Providence, Rhode Island; University of Tennessee Medical School, Memphis, Tennessee; Medical College of Virginia, Richmond, Virginia.
Publications: (1) Niswander, K. R. *et al. The women and their pregnancies, 1972.* (The Collaborative Perinatal Study of the National Institute of Neurological and Communicative Disorders and Stroke.) Available from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Order Stock No. 1749-00038; price, $10.00. (2) A bibliography is available from the investigator.

38-AA-12 STUDY OF PERSONALITY ORIENTED DEVELOPMENT BY THE TWIN INTRAPAIR COMPARISON METHOD

Investigator(s): William Pollin, M.D., Chief; Donald Cohen, M.D., Clinical Associate; and Eleanor Dibble, Research Social Worker, Section on Twin and Sibling Studies, Adult Psychiatry Branch, National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, U.S. Department of Health, Education and Welfare, Bethesda, Maryland 20014.
Purpose: To understand the contributions of genetic, constitutional, and environmental factors to social, emotional, and cognitive development during the first years of life; specifically, to explicate the factors that underlie the emergence of individuality, using twins and triplets as subjects.
Subjects: Twins and triplets, from the prenatal period through elementary school age.
Methods: The central methodological principle emphasizes the effort to define precisely developmental differences within infant and childhood MZ twin pairs, and then search for the determinants of such differences. In the longitudinal study, parents are interviewed as soon as the diagnosis of a twin pregnancy is made. Neurological, pediatric, and developmental assessments are performed at birth and at 3- to 6-month intervals during the first years of life. The parents are interviewed at the same intervals about the children's development and family history. In the preschool period, the children receive standardized psychological testing, are observed in a standardized nursery school setting, and are administered projective psychological testing. Children and families are visited at home and are also seen in structured office settings. In cross-sectional studies, children are seen for developmental evaluation, psychological assessment, and observations of free play; and their parents are interviewed. The value of questionnaire techniques is being investigated. A general research question relates to the way in which constitutional differences in the children elicit different types of parenting, and the ways in which differential parental behavior shapes the emergence of personality differences in children.
Duration: 1967-1980.

38-AA-13 PREVENTIVELY ORIENTED SCHOOL MENTAL HEALTH PROGRAMS

Investigator(s): Emory L. Cowen, Ph.D., Professor, Department of Psychology, and Director; D. A. Dorr, Ph.D., Research Coordinator; L. D. Izzo, M.A., Chief Psychologist; and M. A. Trost, M.A., Chief Social Worker, Primary Mental Health Project, University of Rochester, River Campus Station, Rochester, New York 14627.
Purpose: To detect and prevent school maladaptation.
Subjects: 7,500 school children, including 4,500 primary children in 11 preventively oriented school mental health programs.
Methods: Current research, which originated in 1958 (see *Research Relating to Children, Bulletin 19,* January-September 1965, Study 19-SS-7, p. 214), includes 23 studies on train-

ing nonprofessionals, evaluation of programs, process analyses, selection-process relations, selection-outcome relations, and process-outcome relations. Between 20 and 30 different research instruments and assessment procedures are being used.
Duration: 1958-continuing.

38-AA-14 LANGUAGE ACQUISITION IN THE CONTEXT OF THE DEVELOPMENT OF BEHAVIOR AND INTERACTION

Investigator(s): Margaret Bullowa, M.D., Researcher, Speech Communication Group, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139.
Purpose: To find the steps by which early stages of the child's language development take place.
Subjects: Four firstborn children from white, English-speaking, middle class families.
Methods: Each child was observed from birth for at least 30 months at home at weekly intervals. On each visit a half hour continuous record was made on tape and film. An observer using a shielded microphone dictated a simultaneous description of ongoing behavior and interaction to supplement the film taken by a robot camera. A timing signal was placed on the tape and film every 5 seconds. (The tape and film from an observation may be synchronized during playback in the laboratory.) In addition, an independent team that consisted of a pediatrician and a developmental psychologist visited each baby's home once a month to assess other aspects of maturation and development. Indexes to sound and transcripts were made from the tapes to permit rapid search. Tapes are analyzed by linguists interested in phonological, semantic, and syntactic features. Synchronized tape and film is studied by linguists and by the principal investigator, who is interested in the communicative behavior of which the vocalization forms a part.
Findings: The most significant finding is the apparent obligatory relationship between the child's vocal sound production and actions with the same meaning in early *performative sentences.* Such sentences are used by the child to communicate messages when he is showing something to someone, when he is greeting someone, etc. Another finding is the spontaneous appearance of sentences with topic-comment construction in the child's speech even though parents rarely use this construction. (The construction is not characteristic of adult American English.)
Duration: Pilot study, 1959-1965; present study, 1965-continuing.
Cooperating group(s): National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.
Publications: (1) *Journal of Child Psychiatry,* 1964, III(1), 53. (2) *Monographs of the Society for Research in Child Development,* 1964, 29(1), 101-114. (3) *Language and Speech,* 1964, 7(2), 107-111. (4) *Quarterly Progress Report of the Research Laboratory of Electronics,* 1966, 81, 181-186. (5) *Lingua,* 1967, 19(1), 1-59. (6) *Foundations of Language,* 1967, 1, 37-65. (7) Reibel, D. A. and Schane, S. A. (Eds.) *Modern studies in English.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969. Pp. 422-447. (8) Bar-Adon, A. and Leopold, W. F. (Eds.) *Child language: A book of readings.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971. (9) *Journal of the American Academy of Child Psychiatry,* 1971, 10(1), 124-135. (10) *Quarterly Progress Report of the Research Laboratory of Electronics,* M.I.T., 1971. No. 100. (11) Bullowa, M. From communication to language. Presented at the International Symposium on First Language Acquisition, Florence, Italy, 1972 (mimeo). (12) Bullowa, M. and Putney, E. A method for analyzing communicative behavior between infant and adult from film. Presented at a meeting of the International Society for the Study of Behavioral Development, Ann Ar-

bor, Michigan, 1973 (mimeo). (13) Bullowa, M. Non-verbal communication in infancy. Presented at the 1st Congress of the International Association for Semiotic Studies, Milan, Italy, 1974 (preprint). (14) Gruber, J. S. Correlations between the syntactic constructions of the child and of the adult. In C. A. Ferguson and D. Slobin (Eds.), *Studies of child language.* Holt, Rinehart and Winston, 1973. Pp. 440-445. (15) Bullowa, M. When infant and adult communicate, how do they synchronize their behaviors? In A. Kendon *et al.* (Eds.), *Organization of behavior in face-to-face interaction.* Mouton, 1975. Pp. 97-129. (16) Bullowa, M. *et al.* Infant vocalization: Communication before speech. In T. R. Williams (Ed.), *Socialization and communication in primary groups.* Mouton, 1975. Pp. 243-281. (17) Bullowa, M. A matrix for language. Presented at the 21st Annual Conference of the International Linguistic Association, New York City, March 1976 (mimeo). (18) Bullowa, M. From communication to language. *International Journal of Psycholinguistics* (in press). (19) Bullowa, M. Infants as conversational partners. In T. F. Myers (Ed.), *The development of discourse and conversation.* Edinburgh University Press (in press). (20) Bullowa, M. From performative act to performative utterance. In S. K. Ghosh (Ed.), *Biology, language and human behavior.* University Park Press (in press).

38-AA-15 THE HARVARD PRESCHOOL PROJECT

Investigator(s): Burton L. White, Ph.D., Director; Jean Watts, Ph.D., Co-Director; and Barbara Kaban, M.A., The Harvard Preschool Project, Laboratory of Human Development, Graduate School of Education, Harvard University, 418 Larsen Hall, Appian Way, Cambridge, Massachusetts 02138.

Purpose: To trace the development of educability and competence in children during the first 6 years of life; and simultaneously to trace the role of experience in such development.

Subjects: Presently, 32 normal children, ages 12 to 32 months, of both sexes, half of whom were selected because they exhibited potentials to develop high degrees of general competence during the second and third years of life; while the other children seemed likely to develop a considerably lower level of competence.

Methods: The work in progress constitutes a longitudinal natural experiment. Data are collected by home observation and testing of the children on the average of 2 hours per week. One observational technique consists of tape recordings in which the observer describes the child's activities. The data are then coded onto forms using instruments developed for the project. Another technique involves a checklist record of behavior. Tests of language and cognitive development are administered regularly. Factors are measured including stream of experience, the child's competencies, and salient environmental influences.

Findings: Analysis of preliminary data indicates that the observation instruments are monitoring the development of competence in promising ways. Further indications of how childrearing practices influence the process are becoming clear. The mother, or substitute, usually through indirect action, is seen as the major environmental influence on the development of competence. A longitudinal experiment will be initiated this year. (See *Research Relating to Children, Bulletin 22,* May-December 1967, Study 22-DA-3, p. 16.)

Duration: September 1965-continuing.

Cooperating group(s): (1) U.S. Office of Economic Opportunity. (2) Carnegie Corporation, New York. (3) Head Start; Office of Child Development; Office of Human Development; U.S. Department of Health, Education, and Welfare.

38-AA-16 LEARNING OF INCENTIVE VALUE IN CHILDREN

Investigator(s): Jum C. Nunnally, Ph.D., Professor, Department of Psychology, Vanderbilt University, Nashville, Tennessee 37203.
Purpose: To study the learning of incentive value in children through the use of reward conditioning.
Subjects: Elementary school children, ages 7 to 11.
Methods: Neutral objects (usually nonsense syllables) are associated with receipts of reward, nonreward, and loss of reward in various types of research designs. The amounts and kinds of condition reward value are measured in relation to verbal evaluation, reward expectancy, choice behavior, and measures of selective attention.
Findings: Various consistent effects have been found on the dependent measures, and the research paradigms have been able to differentiate many treatment conditions concerned with secondary rewards.
Duration: 1963-continuing.
Cooperating group(s): Office of Education; U.S. Department of Health, Education, and Welfare.
Publications: (1) Rileigh, K. K. and Nunnally, J. C. A new measure of semantic appraisal for studies of secondary rewards. *Psychonomic Science,* 1970, 18, 203-205. (2) Wilson, W. H. and Nunnally, J. C. A naturalistic investigation of acquired meaning in children. *Psychonomic Science,* 1971, 23, 149-150.

38-AA-17 CHILDHOOD PSYCHOSIS

Investigator(s): Rudolf Ekstein, Ph.D., Director, Childhood Psychosis Project; Seymour W. Friedman, M.D., Director, Clinical Services; Peter Landres, M.D., Staff Psychiatrist; Beatrice M. Cooper, M.A., Senior Research Social Worker; and Joel Liebowitz, Ph.D., Clinical Research Psychologist, Reiss-Davis Study Center, 9760 West Pico Boulevard, Los Angeles, California 90035.
Purpose: To develop better diagnostic and treatment methods for childhood psychosis; and to investigate psychoanalytic methods of treatment, the use of support systems, and work with parents, collaborating agencies, schools, and hospitals.
Subjects: 10 children, ages 5 to 20.
Methods: Data were gathered through tape recordings of psychotherapy sessions, therapists' summaries of sessions, and repeated psychological tests. The use of *distance* as a psychological mechanism will be investigated. (See *Research Relating to Children, Bulletin 18,* March-December 1964, Study 18-L-36, p. 58; and *Bulletin 20,* October 1965-May 1966, Study 20-IA-1, p. 72.)
Duration: 1957-continuing.
Publications: (1) *Children of time and space, of action and impulse.* New York: Appleton-Century-Crofts, 1966. (2) *The challenge: Despair and hope in the conquest of inner space.* New York: Brunner/Mazel, 1971. (3) Ekstein, R. and Friedman, S. W. Do you have faith that I'll make it? *Reiss-Davis Clinic Bulletin,* 1971, 8(2). (4) Rubin, K. The flawed hammer. *Reiss-Davis Clinic Bulletin,* 1971, 8(2). (5) Cooper, B. The flawed triangle. *Reiss-Davis Clinic Bulletin,* 1971, 8(2). (6) Liebowitz, J. M. Transformation of the flaw—Re-evaluation via psychological testing. *Reiss-Davis Clinic Bulletin,* 1971, 8(2). (7) Ekstein, R. and Wax, D. Fusion and diffusion of memory and perception in childhood psychosis in relation to psychotherapeutic innovations. *Reiss-Davis Clinic Bulletin,* 1972, 9(2). (8) Ekstein, R.; Friedman, S.; and Caruth, E. The psychoanalytic treatment of childhood schizophrenia. In B. B. Wolman (Ed.), *Manual of child psychopathology.* New York: McGraw Hill, 1972. Pp. 1035-1057.

38-AA-18 A SURVEY OF THE NUTRITIONAL STATUS OF BRITISH SCHOOL CHILDREN

Investigator(s): Judith Cook, M.B., B.Chem., Lecturer; Douglas Altman, B.Sc., Lecturer; W. W. Holland, M.D., F.F.C.M., Professor; and S. G. Topp, B.Sc., Dip.Stat., Lecturer, Department of Clinical Epidemiology and Social Medicine, School of Medicine, St. Thomas's Hospital, London S.E.1, England; and A. Elliott, M.D., D.P.H., County Medical Officer, Kent County Council, Kent, England.

Purpose: To examine the dietary intake of school children and investigate its relationship to health and socioeconomic factors; and to explore the extent and nature of poor nutrition.

Subjects: 1,017 children, born between 1953 and 1955 or between 1958 and 1960, residing in and attending Local Authority schools in four areas in Kent, England. The sample was stratified by social class, family size, and weight. Higher sampling fractions were taken for children (1) from larger families, (2) from lower social classes, (3) with no fathers, and (4) with low weights, in order to have adequate numbers of subjects in those groups suspected of having the greatest likelihood of deficiency.

Methods: Field work for each child, conducted between September 1968 and March 1970, was comprised of a weighted diet record, a socioeconomic questionnaire, and a medical examination. The weighted diet record was kept for 1 week and was closely supervised by a trained field worker. The same field worker administered the socioeconomic questionnaire which elicited information on family structure, father's occupation, mother's education and working status, the child's health history and eating pattern, and the parents' heights. The medical examination, carried out by one of two medical officers, included a clinical assessment of the nutritional status of the child; measurements of height, weight, triceps and subscapular skinfold thickness, arm circumference, and peak expiratory flow rate. The medical examination also noted clinical evidence of vitamin deficiency.

Duration: 1968-continuing.

Cooperating group(s): Department of Health and Social Security.

Publications: (1) Cook, J. *et al.* A survey of the nutritional status of school children. Relation between nutrient intake and socioeconomic factors. *British Journal of Preventive Social Medicine,* 1973, 27, 91-99. (2) Topp, S. G.; Cook, J.; and Elliott, A. Measurement of nutritional intake among school children. *British Journal of Preventive Social Medicine,* 1972, 26, 106.

38-AA-19 RESEARCH AND GUIDANCE LABORATORY SUPERIOR STUDENT PROJECT

Investigator(s): Marshall P. Sanborn, Ph.D., Director; and Charles Pulvino, Ph.D., Associate Director, Research and Guidance Laboratory, University of Wisconsin, 1025 West Johnson, Madison, Wisconsin 53706.

Purpose: To develop and demonstrate procedures for the identification and description of multipotential and promising youths; to study the guidance and educational development of human potential; and to serve as a demonstration and development center for counseling, guidance, and planning activities for all cooperating high schools.

Subjects: This is a longitudinal sample now numbering 3,700 males and females, ages 14 to 30, from 90 Wisconsin school systems, whose average mental test scores are in the upper three to five percent of students in their age range and grade in school. Subjects are selected using criteria designed to identify multipotential youths in grade 9. These criteria include aspects of the student's vocabulary, spoken and written communication, reading background, range of interests, school performance, creativity, and learning behavior.

Methods: Subjects visit the laboratory facilities for 1 day at least once during their period of high school attendance. Arranged activities include testing and evaluation, analysis of written and oral performances, visits to classes and laboratories, and conferences with university staff members in any area of interest. These activities are designed to (1) broaden students' horizons with respect to educational and vocational opportunities, (2) develop realistic self-concepts about their own strengths and interests, (3) foster plans for suitable educational programs, (4) discover methods for overcoming limitations, (5) encourage development of personal and academic strengths, and (6) provide counsel on matters that may influence the individual student's fullest development. Findings are interpreted and implications are considered with the student in individual counseling sessions. Laboratory staff teams (1) visit students' schools and hold conferences with the parents of each participating child to inform parents about characteristics of their children which they may not know; (2) stimulate action of parents to meet their child's developmental needs; (3) facilitate communication between the parents, school, and student; and (4) discover points of view and other parental characteristics which affect the student's development. A written report regarding each individual student is sent to his or her school containing information about the student's performance, interests, and needs, as well as suggestions the school could implement to provide desired educational or personal experiences. Inservice training sessions are held to discuss specific students, suggestions to the school, and general principles for guidance and education for superior students. Objectives of these training sessions are (1) stimulation of and assistance with the processes of identification of superior students; (2) encouragement and assistance in making special provision for the development of superior students, and stimulation to do so for other students; (3) provision of information about educational and vocational requirements and opportunities particularly applicable to superior students; (4) encouragement of innovation and experimentation in school procedures for superior students as well as for other students; and (5) demonstration of appropriate guidance services for high school students. Although there are difficulties in obtaining adequate control groups, some research studies have been done comparing laboratory participants with other students matched on academic, familial, school, and community variables. In addition, comparisons of the effectiveness of two or more procedures for accomplishing a particular guidance goal have been made in other laboratory research studies.

Findings: The Research and Guidance Laboratory is a cooperative effort which has maintained direct, personal, longitudinal, and functional relationships between the University of Wisconsin and 3,700 top students, their parents, and their teachers throughout Wisconsin (See *Research Relating to Children, Bulletin 22,* May-December 1967, Study 22-QA-1, p. 83.) More than 97 percent of all student participants who have graduated from high school have enrolled in higher education programs. Many have gone on to graduate and professional study. As a group, these young people have established a very outstanding record in college.

Duration: 1957-continuing.

Cooperating group(s): (1) Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (2) Ninety cooperating school systems in Wisconsin.

Publications: (1) Laboratory monograph: Research on the gifted and talented student, 1976. (2) Sanborn, M. P. and Niemiec, C. J. Identifying values of superior high school students. *School Counselor,* March 1971. (3) Bradley, R. W. and Sanborn, M. P. Ordinal position of high school students identified by their teachers as superior. *Journal of Educational Psychology,* 1969, 60(1), 41-45. (4) Mowsesian, R.; Heath, R. G.; and Rothney, J. W. M. Superior students' occupational preferences and their fathers' occupations. *Personnel and Guidance Journal,* November 1966. (5) Refer to *Education Index* for other publications related to this project.

GROWTH AND DEVELOPMENT

General

38-BA-1 SOME LONGITUDINAL ANTHROPOMETRIC STUDIES ON NORMAL FILIPINO CHILDREN, AGES 0 TO 6

Investigator(s): Asuncion C. Baltazar, M.D., Science Research Associate IV, Food and Nutrition Research Institute, National Science Development Board, 727 Pedro Gil, Manila, Philippines.
Purpose: To set up standard height and weight of normal Filipino children, ages 0 to 6, based on data gathered longitudinally from children in well-to-do families, in order to assess the nutritional status of Filipino children; and to assess other physical measurements including skinfold, and circumferences of head, chest, abdomen, and arm, for these measurements are highly correlated with physical growth and can also serve as parameters to assess nutritional status.
Subjects: 300 normal, Filipino neonates (150 females and 150 males) from upper and/or middle socioeconomic levels in the Greater Manila area.
Methods: The subjects will be taken from different hospitals in metropolitan Manila and will be followed in their own homes (1) monthly from 0 to 12 months, (2) every 3 months from 1 to 2 years, and (3) every 6 months from 2½ to 6 years. Data to be collected include (1) length in centimeters: using an infantometer at ages 0 to 12 months and a steel tape with measurement taken in recumbent position after 12 months; (2) weight in kilograms: using the infant scale at ages 0 to 12 months and a pediatric scale for over 1 year; (3) circumferences of head, chest, abdomen, and arm in centimeters: using a tape measure at the specified location described by D. B. Jellife in *The Assessment of the Nutritional Status of the Community;* (4) skinfold thickness in millimeters of the left upper arm and scapula: using a Harpenden Caliper; and (5) dietary intake: gathered on the basis of a monthly recall.
Duration: April 1976-April 1982.
Cooperating group(s): Agency for International Development, National Nutrition Council.

38-BA-2 SOME LONGITUDINAL ANTHROPOMETRIC STUDIES ON NORMAL FILIPINO CHILDREN, AGES 4 TO 12

Investigator(s): Asuncion C. Baltazar, M.D., Science Research Associate IV, Food and Nutrition Research Institute, National Science Development Board, 727 Pedro Gil, Manila, Philippines.
Purpose: To establish the physical growth pattern of normal, Filipino children, ages 4 to 12, from data gathered longitudinally and quasi-longitudinally.
Subjects: 500 children, age 4 (250 males and 250 females), followed up until age 12; and 100 children (50 males and 50 females), ages 6, 8, and 10, followed up for 3 years. All subjects are normal, Filipino children from high income groups.
Methods: A series of observations will be made twice a year taken on the day closest to

the birthday of 4, 6, 8, and 10-year-old, normal, Filipino, high income group children. Measurements include (1) height (standing and sitting) in centimeters: instruments used are steel tapes in centimeters and triangular rulers; (2) weight in kilograms: using pediatric scales in kilograms; (3) circumferences of head, chest, abdomen, and left upper arm in centimeters: using a flexible steel tape calibrated in centimeters; and (4) skinfold thickness in millimeters of triceps and scapula: using a Harpenden Caliper.
Duration: 1976-1986.

38-BA-3 MENTAL DEVELOPMENT OF INFANTS IN TWO ETHNIC GROUPS: FINDINGS FROM THE JERUSALEM STUDY OF GROWTH AND DEVELOPMENT

Investigator(s): Sarah Smilansky, Ph.D., Senior Researcher; Leah Shephatiah, M.A., Research Coordinator; and Eva Frenkel, M.A., Research Coordinator, Henrietta Szold Institute, 9 Columbia Street, Kiryat-Menachem, Jerusalem, Israel.
Purpose: To conduct preliminary analyses on mental development of children related to ethnic differences, family correlates of IQ at age 4, and the validity of infant tests using the mental development data from the Jerusalem study of growth and development.
Subjects: 71 male and 43 female infants whose parents immigrated from Morocco; and 126 male and 125 female infants whose parents immigrated from Europe.
Methods: The Jerusalem study was the first comprehensive study of infancy and early childhood in Israel. It was designed to assess the cognitive, socioemotional, and physical growth of children, as well as to study childrearing practices and their relationship to the child's development from a cross-cultural perspective. Data collection of the longitudinal study started in February 1965 and was terminated in February 1970, when all children involved reached age 4. Pregnant mothers were contacted and interviewed in their homes. All further interviewing, testing, and physical examinations were conducted in the research clinic, at ages 4 weeks, 3, 6, 9, 12, 18, 24, and 30 months; and at 3 and 4 years of age. For each of the visits, the information obtained included a variety of data on social-psychological, as well as physical aspects of child development and childrearing. In the present research, only background data and mental scores were utilized. The Brunet-Lezine Infant Development Test was used up to 30 months, and the Stanford-Binet for 3 and 4 years.
Findings: Up to 18 months, the Moroccan origin children score higher than those of European background on all subfields measured by the Brunet-Lezine Infant Test. At age 2, there are no differences in total scores, but there are ethnic differences by subscores, which are interpreted as indicating a beginning of the decline in the mental development of the Moroccan origin group. At ages 3 and 4, the European origin children score considerably higher. However, all the differences in IQ at these age levels are accounted for by parents' educational level. No ethnic effect was found. Parental education was found to be the most powerful background variable in predicting IQ at age 4. Other variables significantly related to IQ are number of children in family, and the birth of an additional sibling. Parental education is of greater impact in the Moroccan origin population. The prediction of IQ at age 4 by the Brunet-Lezine Infant Test is low during the first year for the total sample, but there are significant and considerable correlations by subgroups. From age 18 months, there is a substantial rise in the predictive validity of the infant tests (especially in the language and coordination subscores) for the total sample as well as for each subgroup. This is interpreted as a sign for relative stabilization of mental functioning, as well as of interaction patterns between the child and his environment.
Duration: 1964-completed.
Cooperating group(s): Ford Foundation.
Publications: Research Report No. 195 is available from the Henrietta Szold Institute.

Physical

38-CA-1 SEASONAL RHYTHM IN THE RATES OF GROWTH IN HEIGHT AND WEIGHT

Investigator(s): Barry A. Bogin, M.A., Department of Anthropology, Temple University, Philadelphia, Pennsylvania 19122.
Purpose: To ascertain the existence of a yearly rhythm in the rates of growth in height and weight of normal children; and to correlate such rhythms with environmental phenomena.
Subjects: Approximately 250 children in three age groups: 7 to 8, 11 to 13, and 15 to 16, equally distributed by sex in all age groups. All children were of upper socioeconomic class and free of any clinical pathologies.
Methods: Fourteen equally spaced monthly measurements of height and weight were taken using standard anthropometric equipment and procedures. Besides the normal descriptive statistical methods, a BMD computer program, periodic regression, and harmonic analysis are used to test for significant growth rhythms.
Findings: Preliminary analysis shows that distinct growth rhythms for both height and weight do exist. These rhythms seem to be associated with changes from rainy season to dry season, but much more analysis needs to be done before this can be firmly established.
Duration: September 1974-December 1976.
Cooperating group(s): (1) Latin American Teaching Fellowships. (2) The American School of Guatemala.

38-CA-2 CHILDREN AT RISK FOR HYPERLIPEDEMIA

Investigator(s): Ruth Whittemore, M.D., Clinical Professor of Pediatrics and Pediatric Cardiologist, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut 06510.
Purpose: To identify the magnitude of the problem of hyperlipedemia in children in an urban setting.
Subjects: All children of index patients, age 50 or under, with coronary or ischemic heart disease or cerebre vascular problems and who have abnormal lipids.
Methods: Index patients were identified in all coronary care and special units within a large medical school hospital. The children of identified patients had cholesterol and triglyceride determinations performed and a family history was obtained. Special dietary assistance and lipid clinic treatment and follow-up were established. The percent of affected children of index patients will be reported and some of their problems will be identified.
Duration: June 1976-June 1977.
Cooperating group(s): (1) Connecticut State Department of Health. (2) Division of Research; Maternal and Child Health Service; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare.

38-CA-3 PHYSICAL ACTIVITY AND GROWTH IN PRESCHOOL AGE CHILDREN

Investigator(s): Benjamín Torún, M.D., Ph.D., Program Coordinator, Physiology and Clinical Nutrition; and Fernando E. Viteri, M.D., D.Sc., Division Chief, Division of Human Nutrition and Biology, Institute of Nutrition of Central America and Panama, Carretera Roosevelt, Zona 11, Guatemala C. A., Guatemala.

Purpose: To measure the effect of a program of physical activity on children going through a rapid phase of growth (recovering from malnutrition); and to compare them to a control group that experiences normal activity in a hospital environment.

Subjects: 18 children were studied in each group. Each study lasted 6 to 8 weeks.

Methods: All children were fed 2.5 grams of protein derived from milk, eggs, and corn; 120 Cal/kg, 20 percent coming from vegetable fat plus vitamins and minerals. Both control and active groups were stimulated psychologically, their intake was accurately measured, and their physical activity was monitored by means of pulse accumulators and by means of periodical regressions between heart rate and oxygen consumption at different levels of exercise. (The total energy expenditure of the children can be measured throughout the day.) Nitrogen and energy balance, rate of growth, basal energy expenditure, and body composition studies were performed in a longitudinal fashion throughout the study.

Findings: Children who are physically active grow substantially more than those who are not. The efficiency of food utilization is therefore increased, as is their muscle mass and active tissue mass measured by basal oxygen consumption.

Duration: 1975-1977.

Cooperating group(s): (1) Division of Human Nutrition and Biology; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare. (2) University of California, Berkeley.

Publications: A paper presented at the Xth International Congress of Nutrition, Kyoto, Japan, August 1975: Effect of physical activity upon growth of children recovering from protein-calorie malnutrition (PCM).

38-CA-4 CAPE TOWN CHILD DEVELOPMENT STUDY

Investigator(s): C. D. Molteno, FCP (S.A.), Senior Specialist; and A. Moodie, AMIA ARSH, Research Worker, Institute of Child Health, Red Cross War Memorial Children's Hospital, Rondebosch, Cape Town, Republic of South Africa 7700.

Purpose: To study the early growth and development of a birth cohort of coloured babies, in order to produce evidence on the incidence and distribution of neurological deficit.

Subjects: Approximately 1,000 coloured (mixed race) babies in a serial birth cohort, born in the Cape Town municipal area.

Methods: The total cohort will be weighed regularly and screened for neurological deficit at predetermined times. Cases picked up at screening will have a full developmental assessment. A random sample of 180 babies will be studied in greater depth, including collation of data on socioeconomic factors.

Duration: May 1976-June 1978.

Cooperating group(s): (1) Cape Town City Council, Health Department. (2) South African Research Council, National Biostatistical Research Centre.

38-CA-5 LONGITUDINAL STUDY OF OUTCOME OF A BIRTH COHORT

Investigator(s): Shanti Ghosh, F.A.M.S., M.D., Head, Department of Pediatrics, Safdarjang Hospital, New Delhi 110016, India.
Purpose: To investigate the relationship of family, socioeconomic, and environmental factors to the growth and development of children.
Subjects: 4,000 children from an original study population of 100,000.
Methods: Anthropometric data were gathered every 6 months including an examination of the children, records of development, and assessment and record of morbidity. The relationship of the data to family, socioeconomic, and environmental factors will be studied. (See also *Research Relating to Children, Bulletin 29,* September 1971-August 1972, Study 29-SD-1, p. 117.)
Duration: 1969-1978.
Cooperating group(s): (1) Indian Council of Medical Research. (2) National Center for Health Statistics; Health Services and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.
Publications: (1) A longitudinal study of physical growth in high socio-economic group Indian babies during the first 2 years of life. *Indian Pediatrics,* 1974, 11, 395. (2) Maternal health, child health, and family planning: A plea for integrated approach. *Indian Pediatrics,* 1973, 10, 637. (3) Outcome of birth cohort in a South Delhi community. *Indian Pediatrics,* 1972, 9, 495.

38-CA-6 A LONGITUDINAL STUDY OF THE GROWTH AND DEVELOPMENT OF CHINESE CHILDREN IN HONG KONG

Investigator(s): C. Elaine Field, M.D., F.R.C.P., Professor of Child Health and Director; and Flora M. Baber, MB.Ch.B., MRCP(E), D.C.H., Supervisor, Child Development Centre, University of Hong Kong, Yaumatei, Kowloon, Hong Kong.
Purpose: To study the growth and development from birth to 9 years (1967-1976) of Chinese children; and to correlate the findings in terms of their social environment.
Subjects: 782 randomly selected neonates (425 males, 357 females), who weighed 2.268 kgms or more at birth and are of Southern Chinese origin. All subjects were born in one of two large maternity hospitals in Kowloon between February 24 and April 1, 1967.
Methods: Full details of family, pregnancy, and birth were obtained from hospitalized mothers and from hospital records. Babies were examined within 24 hours of birth. Repeat examinations (physical, anthropometric, and psychological assessment) were conducted at monthly intervals during the first year; every 2 or 3 months during the second year; every 6 months from ages 3 to 5; and annually from ages 5 to 9. Data were obtained on care of the child including feeding, illnesses, and accidents. Traditional drugs were given at each visit by nurses. X-rays were taken biannually of the wrist from the time the child was 6 months old.
Findings: Babies' progress in the first 4 months is good and then retardation of growth corresponds to weaning from 4 to 22 months, associated with seasonal variations in growth and very high incidence of infection (mainly respiratory caused by overcrowding). Weaning from milk is too rapid, and weaning diet is inadequate. This period is associated with behavior changes (inhibition, excessive shyness, hypotonicity).
Duration: February 1967-June 1976.
Cooperating group(s): (1) Princess Mary Maternity Hospital, Newcastle-on-Tyne, United Kingdom. (2) Nuffield Foundation. (3) Li Shu Fan Medical Foundation, Hong Kong. (4) China Medical Board.

Publications: (1) Developmental screening test from 0-2½ years for Chinese children (in press). (2) Skeletal age of Chinese children (in press). (3) Baber, F. M. *et al.* Variation in growth in the first 3 years. *Asian Journal of Medicine,* 1974. (4) Billewicz, W. Z. *et al.* Primary dentition in Chinese children. *Annals of Human Biology,* 1973. (5) Field, C. E. and Baber, F. M. *Growing up in Hong Kong.* Hong Kong: Hong Kong University Press, 1973.

38-CA-7 NEONATAL DEVELOPMENT ASSESSMENT PROJECT

Investigator(s): Robert K. Rentfrow, Ph.D., Assistant Professor, College of Education; and Ellena Parra, Psychological Examiner, Department of Pediatrics, Arizona Medical Center, University of Arizona, Tucson, Arizona 85721.
Purpose: To conduct a longitudinal investigation of the later cognitive, social, and physical development of low birthweight premature children.
Subjects: A prospective sample of 2,000 prematures born in Southeastern Arizona.
Methods: The children will be sampled in a decade-long study of their later development. The study will utilize existing standardized tests of mental development, along with tests of psychomotor maturity to assess the children's development. Parent questionnaires and teacher ratings after school entry will be used to assess social and family adjustment.
Duration: January 1976-January 1986.
Cooperating group(s): Robert Wood Johnson Foundation.
Publications: Interim reports are planned annually in January.

38-CB-1 THE WEIGHT OF CHILDREN, AGES 6 TO 17

Investigator(s): C. Wesley Dupertuis, Ph.D., Professor Emeritus of Clinical Anthropology; and Helen S. Dupertuis, M.A., Assistant Professor of Clinical Anthropology, School of Medicine, Case Western Reserve University, 2119 Abington Road, Cleveland, Ohio 44106.
Purpose: To develop tables indicating weights for children by height proportional to frame (bone) size derived from anthropometric measurements.
Subjects: 100 boys and 100 girls at each age: 6 to 17 years. Most of the children were measured in schools in Cleveland, Ohio; Dearborn, Michigan; and Santa Clara, California.
Methods: Bone size of all major areas of the body is determined by anthropometric measurements. Skeletal size percent is calculated from four representative measurements. Proportionate weight based on height and skeletal size percent will be presented in Weight Tables for each age and sex from 6 to 17 years. Weight Tables are based on frame or skeletal size percent derived from bone measurements. Guesswork will be eliminated in arriving at determination of frame size. These tables will be the only known tables for determining proportionate weight of children, ages 6 to 17, based on height and frame (bone) size derived from four simple anthropometric measurements representing all major areas of the body.
Duration: 1961-continuing.
Cooperating group(s): (1) Greenfield Village School, Dearborn, Michigan. (2) Santa Clara, California schools. (3) Biological Humanics Foundation.

38-CC-1 OPERANT CONDITIONING USING FADING VS. NONFADING TECHNIQUES WITH RANDOM DOT STEREOGRAM

Investigator(s): Jeffrey Cooper, O.D., Assistant Clinical Professor; and Jerry Feldman, Ph.D., Assistant Professor, State College of Optometry, State University of New York, 122 East 25th Street, New York, New York 10010.
Purpose: To investigate the ability to respond to a Random Dot Stereogram (RDS) which has a square superimposed, which is faded out, as compared to a RDS lacking the Nonocular cue.
Subjects: 20 children, ages 2 to 8, who show no evidence of amblyopia or strabismus.
Methods: Operant conditioning with BSR digibit will control stimuli, responses, records, and recording. A protest will be given with successive presentations (RDS with central squares). Children are divided into two groups: Group 1 receives the fading stimuli procedure; Group 2 will continue the protest and is yoked to the number of trials of Group 1. Multiple baseline analysis will be used.
Duration: July 1976-December 1976.

38-CC-2 THE EFFECT OF UNDEVELOPED LATERALITY ON VISUAL ACUITY USING THE TUMBLING "E" CHART

Investigator(s): J. Warshowsky, O.D., Resident; C. Hirsch, O.D., Resident; A. Purvin, O.D., Resident; and C. Sweet, O.D., Resident, State College of Optometry, State University of New York, 122 East 25th Street, New York, New York 10010.
Purpose: To investigate the possible relationship of undeveloped laterality as a contributing factor to poor performance on visual acuity tests that are based solely on the Tumbling "E" letter chart.
Subjects: 25 boys and girls, ages 4 to 12, taken from the patient population at the University Optometric Center of New York.
Methods: Patients were first tested on Snellen, Animal, or Picture acuity charts. A different examiner tested visual acuity using the Tumbling "E" chart and the plastic handheld "E" form. The Piaget Test of Laterality was administered by a third examiner. Each of the three examiners was unaware of the other test results. A statistical correlation between laterality and the various measures of visual acuity was then performed.
Duration: August 1976-December 1976.
Cooperating group(s): State University of New York, State College of Optometry, Vision Training Department.

38-CC-3 PERFORMANCE ON AN EMBEDDED FIGURE TEST AS AN EXPRESSION OF OCULOMOTOR POSTURE

Investigator(s): Martin H. Birnbaum, O.D., Assistant Clinical Professor; and Harry A. Walker, Ph.D., Associate Professor, State College of Optometry, State University of New York, 122 East 25th Street, New York, New York 10010.
Purpose: To explore relationships between analytical cognition and oculomotor posture.
Subjects: 100 girls and boys, ages 5 to 6.
Methods: Data will be collected on various visual dimensions, such as eso- and exophoria, intermittency, stability, etc., and embedded figure; in an effort to determine hypothesized associations between measures via statistical analysis.
Duration: August 1976-July 1977.
Cooperating group(s): State University of New York, State College of Optometry, Vision Training Clinic.

38-CC-4 EFFECTIVENESS OF VISION TRAINING IN DIVERGENCE EXCESS STRABISMUS

Investigator(s): Stanley Goldrich, Ph.D., O.D., Assistant Professor, State College of Optometry, State University of New York, 122 East 25th Street, New York, New York 10010.
Purpose: To determine the effectiveness of vision training in the treatment of divergence excess strabismus.
Subjects: Boys and girls, ages 6 to 16, selected from vision training clinic patients of the State University of New York Optometric Center.
Methods: The progress of patients who were diagnosed as having Divergence Excess type of strabismus was evaluated related to success or failure of treatment. The Flax model of treatment was used. An analysis was made of the training methods employed.
Duration: July 1975-December 1976.
Publications: A report presented to the American Academy of Optometry, Portland, Oregon, December 1976. Data are available from the investigator.

38-CE-1 MONITORING SUBCLINICAL MALNUTRITION TO ENHANCE RURAL DEVELOPMENT

Investigator(s): Linda P. Scott, Ph.D., Principal Investigator; and Steven A. Kay, M.A., Co-Investigator, Department of Education/Psychology, Chandler Hall, Kentucky State University, Frankfort, Kentucky 40601.
Purpose: To develop a set of correlated indices that can be used to study subclinical malnutrition.
Subjects: 117 male and female school children, ages 8 to 12, randomly selected from third to sixth grades in six counties in Kentucky.
Methods: A 24-hour Food Intake Recall Survey was administered to each subject. The results of the survey have been analyzed, yielding data for each subject on amounts of protein, carbohydrates, fats, iron, and calories in the diet. Subjects were also given the California Achievement Test, the California Test of Mental Maturity (Short Form), the California Test of Personality, and the Devereaux Adjectival Check List. Statistical analysis, consisting of multiple multivariate regression analysis seeking correlations among test data and nutritional data, has not been completed.
Findings: There are significant differences between schools in terms of mental maturity and language achievement. There is significant difference in MM scores between races. Nine-year-old males showed a significant rise in outgoing behavior which was unexpected.
Duration: Fall 1972-Summer 1977.
Cooperating group(s): U. S. Department of Agriculture.

38-CE-2 A STUDY OF FACTORS THAT INFLUENCE HUMAN FOOD HABIT FORMATION AND CHANGE

Investigator(s): James W. Nordstrom, Ph.D., Associate Professor; Mary Bess Kohrs, Ph.D., Assistant Professor; and Marilynn Buescher, B.S., Graduate Student, Human

Nutrition Research Program, Department of Agriculture and Natural Resources, Schweich Hall, Lincoln University, Jefferson City, Missouri 65101.

Purpose: To evaluate the effectiveness of the Expanded Food and Nutrition Education Program (EFNEP) for improving nutritional status of children of low income families.

Subjects: 80 boys and girls, ages 1 to 5, who are members of families served by the EFNEP.

Methods: The EFNEP is a service of cooperative extension sponsored by the U. S. Department of Agriculture. Nutrition aides (paraprofessionals) visited low income families at home to teach nutrition and food buying, storing, and preparation. Trained interviewers obtained dietary histories on one child in each of 50 families that had been enrolled in the EFNEP for a year or longer, and in 50 homes of families newly enrolled in the program. Biochemical and clinical data were collected on the children in a special clinic.

Findings: Measurements on blood samples indicated that about 20 percent of the children had low serum iron and hemoglobin values, 10 percent had low serum vitamin C, and 50 percent had low vitamin A (according to the Ten-State Nutritional Survey Guidelines). Dietary history data suggested that calcium and iron were the most serious dietary problems when compared to the R.D.A. Findings to date do not include comparisons of children from new and old program families, since data summarization is not complete.

Duration: February 1974-December 1977.

Cooperating group(s): (1) U. S. Department of Agriculture. (2) Missouri Cooperative Extension Service.

38-CE-3 AMINO ACID REQUIREMENTS FOR PRESCHOOL AGE CHILDREN

Investigator(s): Guillermo Arroyave, Ph.D., Program Coordinator, Control of Hypovitiminosis A.; Benjamin Torún, M.D., Ph.D., Program Coordinator, Physiology and Human Nutrition; Oscar Pineda, Ph.D., Program Coordinator, Metabolism and Nutritional Requirements; and Fernando E. Viteri, M.D., Ph.D., Division Chief, Division of Human Nutrition and Biology, Institute of Nutrition of Central America and Panama, Carretera Roosevelt, Zona 11, Guatemala C.A., Guatemala.

Purpose: To determine the specific requirements of amino acids, which are limited in the usual diets of developing countries; i.e., the amino acids methionin, lisine, tryptophan, threonine, isoleucine, and valin.

Subjects: Perfectly healthy children, ages 1 to 3. (Six children were studied for each amino acid.)

Methods: Children are fed a diet that contains 0.3 grams of protein per kilo from milk and an amino acid mixture, prepared in identical composition to milk, which provides nitrogen in equivalent amounts to 0.9 grams of protein per kilo, plus carbohydrates and vegetable oil to provide 100 Cal/kg; plus vitamins and minerals. The amino acid being tested is reduced in amount by exchanging it with glycine. Evaluation of the adequacy of nutrition is done by testing blood (red cells and plasma) for the amino acid (after fasting and after a meal) and by measuring nitrogen balance, body composition, and growth.

Duration: 1975-1977.

Cooperating group(s): Division of Human Nutrition and Biology; National Institutes of Health; U.S. Department of Health, Education, and Welfare.

38-CE-4 EFFECTS OF INFANT MALNUTRITION ON INFORMATION PROCESSING AND PERSONALITY DEVELOPMENT AT THE GRADE SCHOOL LEVEL

Investigator(s): Karen Olness, M.D., Associate Professor of Pediatrics and Director of Medical Education, Children's Health Center, University of Minnesota, 2525 Chicago Avenue, Minneapolis, Minnesota 55404; and Frankie Mae Paulson, M.A., Doctoral Candidate, Department of Psychology; and Wayne Rusin, Medical Student, Medical School, University of Minnesota, Minneapolis, Minnesota 55455.

Purpose: To determine if there are long-term effects on intellectual functioning from short periods of starvation during infancy.

Subjects: 80 boys and 80 girls, ages 8 to 11, of average or above general intelligence, who belong to one of four groups: (1) children who had pyloric stenosis associated with starvation periods, (2) children who had pyloric stenosis not associated with starvation periods, (3) children born with cleft lip and palate not associated with starvation periods, and (4) normal children who suffered no known period of starvation during infancy nor any pronounced stress such as experienced by repeated surgery of the cleft palate/cleft lip children. Twenty children in each group were boys; 20, girls.

Methods: A narrative of parents' feelings about the newborn's appearance was obtained to appraise any differences to reactions in parental feelings about the normal as opposed to the cleft palate/cleft lip child, and to appraise reactions to onset of symptoms of pyloric stenosis. Behavioral and personality characteristics of the children were assessed with the Personality Inventory for Children, a validated, standardized questionnaire completed by parents based on their observations of their child. It assesses several of the dimensions found by Klein *et al.* to be associated with starvation experience in pyloric stenosis. Of particular importance will be the assessments of anxiety, distractability, aggression, hyperactivity, and moodiness. Observations by trained observers were made to assess on-the-spot indications of anxiety, distractability, and hyperactivity during the evaluation sessions. Evaluations were made of information processing functions and intellectual performance. Evaluation of short-term memory included using the digit span portion of the Wechsler Intelligence Scale for Children (revised); a measure of retention of verbal items modeled after the method of Peterson and Peterson and the Benton Visual Retention Test. To evaluate long-term memory, a measure of verbal item retention modeled after the methods of Peterson and Peterson was used, and the paired association method was used modeled after a method standardized and used by the Neuropsychology Laboratory, University of Minnesota Hospitals, Health Sciences Division. Other tests used in evaluating processing functions and intellectual performance were: Raven's Progressive Matrices as an assessment of analogical, abstract reasoning skills; Porteus Maze to measure intelligence and impulsivity; the Stroop Word Color Test as a measure of distractability; and the Embedded Figures Test as a measure of visual organization ability.

Duration: April 1976-August 1977.

38-CE-5 EFFECT OF PROTEIN-CALORIE INTERVENTION ON HUMAN GROWTH, MORBIDITY, AND MORTALITY

Investigator(s): Reynaldo Martorell, Ph.D.; Robert E. Klein, Ph.D.; Ricardo Bressani, Ph.D.; Aaron Lechtig, M.D., M.P.H.; and Hernan Delgado, M.D., M.P.H., Scientists, Division of Human Development, INCAP, P. O. Box 1188, Guatemala City, Guatemala.

Purpose: To evaluate the impact of a wide range of nutritional interventions on growth retardation, morbidity, and mortality.
Subjects: Over 4½ years, 50 neonates born each year in each of six Guatemalan villages. The children will be monitored until they are 4 years old.
Methods: In all villages children receive medical care. In Village I, children receive only medical care. Children in Villages II, III, IV, V, and VI receive nutritional intervention for 3 years. Village II children are given calories in the form of a high energy cookie for 1 year; Village III children receive protein quality (Opaque-2 corn); Village IV, more protein of better quality (soya); Village V, more of the regular diet (corn and beans); and Village VI children receive more calories and more protein of better quality (soya and cookie). Anthropometry and morbidity and census surveys are the principal data collection activities. Data will be analyzed.
Duration: July 1976-January 1981.
Cooperating group(s): (1) INCAP, Division of Agricultural Chemistry. (2) Agency for International Development.

38-CF-1 STUDY OF CYSTIC LESIONS IN CHILDREN

Investigator(s): J. R. Porteous, Senior Lecturer in Pedodontics; and F. J. C. Hood, Senior Lecturer in Oral Surgery, Department of Child Dental Health, Dental School, University of Newcastle-upon-Tyne, Northumberland Road, Newcastle-upon-Tyne, England.
Purpose: To assess the etiology, pathology, and treatment of dental cystic lesions encountered in children
Subjects: 100 children, ages 2 to 16, attending directly or referred by dental practitioners to the Department of Child Dental Health, University of Newcastle-upon-Tyne.
Methods: The study was designed to investigate the possible etiology of cystic lesions from clinical evaluation and from the histopathology. In addition, it is hoped from long-term data to assess the various treatment methods utilized.
Findings: Cystic lesions, including keratocysts in children, respond well to treatment. The method is not significant. It may be possible to question the etiology of dentigerous cysts.
Duration: 1965-1977.

38-CF-2 STUDIES OF FACIAL AND DENTAL GROWTH IN PRE- AND POSTADOLESCENTS

Investigator(s): Coenraad F. A. Moorrees, D.D.S., Senior Staff Member, Forsyth Dental Center, 140 Fenway, Boston, Massachusetts 02115.
Purpose: To obtain, by studying twins and their siblings longitudinally, an accurate estimate of facial, dental, and somatic growth, growth rates, and patterns with reference to chronologic and physiologic age scales.
Subjects: 414 mono- and dizygotic, Caucasian, male and female twins, ages 4 to 13.
Methods: Roentgenographic cephalometry, dental cast analysis, anthropometry, hand-wrist radiographs, and lateral jaw radiographs were obtained. Statistical methodology has been designed for univariate and multivariate analysis of quantitative and qualitative data.

Findings: Norms have been established for the formation of six mandibular teeth (M_1-C), root resorption (dm_1,dm_2,dc), tooth emergence (all teeth except M_3), and skeletal maturation stages (Tanner-Whitehouse) in hand-wrist. The principal component analysis of tooth emergence is completed.
Duration: 1960-continuing.
Publications: (1) Moorrees, C. F. A. *et al.* New norms for the mesh diagram analysis. *American Journal of Orthodontics,* 1976, 69, 57-71. (2) Moorrees, C. F. A. *et al.* The computerized mesh diagram analysis. *Transactions of the Third International Orthodontic Congress,* Mosby Co., St. Louis, Missouri, 1975, 185-195. (3) Medicus *et al.* Reproducibility of rating stages of osseous development. (Tanner-Whitehouse System). *American Journal of Physical Anthropology,* 1971, 35, 359-372.

Intellectual

38-DA-1 CHANGES IN THE SOCIAL AND COGNITIVE COMPETENCE OF CANADIAN CHILDREN FROM LOW AND HIGH INCOME FAMILIES IN PRESCHOOL, KINDERGARTEN, AND THE PRIMARY GRADES

Investigator(s): Mary J. Wright, Ph.D., Professor, Department of Psychology and Director, University Laboratory Preschool, University of Western Ontario, London, Ontario, Canada.
Purpose: To investigate changes in the social and cognitive competence of Canadian children.
Subjects: 87 white, anglophone children (42 boys and 45 girls); 46 children from low income families, and 41 from high income families. They represent three waves of subjects and their controls, who were enrolled as 3-year olds in the University Laboratory Preschool in 1973, 1974, and 1975.
Methods: Subjects are assessed each year 1 month after admission to school and 7 months later at the end of the academic year. Competence in four areas is assessed: (1) social competence: observational procedures and criteria proposed by B. L. White (White and Watts, 1973) are used; (2) motivational characteristics: using observations in laboratory situations and teachers' ratings of self-direction, mastery, curiosity, and self-management; (3) cognitive and intellectual abilities: using the Stanford-Binet Intelligence Scale, the Preschool Inventory (1970 edition), the Circus Tests of Language ("Say and Tell") and Number ("How Much and How Many"); and (4) cognitive styles: using the Circus Tests of Problem Solving ("Think it Through") and Creativity ("Make a Tree"), the Kansas Reflection-Impulsivity Scale for Preschoolers (Wright, 1971), the Albin-Stott Maps Test of Divergent Thinking, and teachers' ratings of creativity and imagination. Changes in performance over 2 preschool years are assessed, and the subjects are then followed up in the public schools. Effectiveness of the educational program for the low income, preschool subjects is assessed (1) in terms of the extent to which socioeconomic differences between them and the high income subjects is reduced, and (2) by comparing their performance with a control sample of low income subjects in day care settings. In the follow-up study in the public schools, a new control group of low income subjects, without any preschool experience, is employed and additional assessment procedures are used. These include the Stanford Early School Achievement Tests, a measure of locus of control, and teachers' ratings of personality and adjustment to school.
Findings: The first wave of subjects has now completed kindergarten. Initial socioeconomic differences (at age 3), which favored the high income subjects, were found

in intellectual (especially conceptual) ability, but not in social competence, motivation, or language ability. During the first year in preschool, the high income children made greater gains in intellectual performance than did the low income children, and the differences between them increased. However, during the summer months, the high income subjects' rate of development slowed down, while that of the low income subjects continued at a steady rate or showed a marked spurt. During the second year in preschool, the low income children gained more than did the high income children; and by the spring of that year, had caught up to them in all of the intellectual and cognitive abilities assessed, except number. At the end of kindergarten, these subjects were still maintaining their preschool gains. The characteristic social behavior of the children, especially the 3-year olds, changed in complex ways. Well-developing children in the preschool increased interactions with peers and decreased interactions with adults. High scores on *leads and follows peers* were positively correlated with educational achievement, number acquisition, problem solving, creativity, and imagination (though not with Binet IQ or language) and negatively correlated with behavior categories such as expressing affection and hostility to adults and other adult interaction categories which appear to be measuring dependency. The number of peer interactions in which the children engaged and the extent to which they shifted their interactions from adults to peers over time was found to be related to situational variables which increased task-oriented behavior and reduced the opportunities for dramatic play.

Duration: 1973-1981.

Cooperating group(s): (1) Ministry of Community and Social Services of the Province of Ontario. (2) Richard and Jean Ivey Fund.

Publications: (1) Wright, M. J. Changes in the social competence of some Canadian preschool and day nursery children of low and high socio-economic status. *Interchange* (in press). (2) A paper presented at the annual meetings of the Canadian Psychological Association, Toronto, June 1976: Wright, M. J. and Pederson, D. R. Situational factors as critical variables in a preschool program. (3) Wright, M. J. *The Laboratory Preschool: Program development in the first three years. Research Bulletin #355.* University of Western Ontario, Department of Psychology, 1976. (4) Wright, M. J. *Competence in preschool children II: Two years in the Laboratory Preschool. Research Bulletin #348.* University of Western Ontario, Department of Psychology, 1975. (5) Wright, M. J. *Competence in preschool children. Research Bulletin #313.* University of Western Ontario, Department of Psychology, 1974.

38-DB-1 COGNITIVE STYLE RELATED TO PERFORMANCE ON A MULTIDIMENSIONAL GENERALIZATION TASK

Investigator(s): Harriette Guldmann, Ph.D., Assistant Professor, Department of Home Economics, University of Texas, Austin, Texas 78712.

Purpose: To compare the generalization performance of children designated as slow-accurate, fast-accurate, fast-inaccurate, and slow-inaccurate by the Matching Familiar Figures Test (MFFT).

Subjects: 70 girls and boys, ages 5.0 to 5.11, from low- and middle-income families.

Methods: First, the MFFT was administered, followed within 2 weeks by a matching-to-standard generalization task varying on two dimensions. Slope values, representing the steepness of the generalization gradients, were the units of analysis.

Findings: Slow-accurate subjects exhibited significantly steeper generalization gradients—indicating better discrimination abilities—than slow-inaccurate subjects.

Duration: September 1975-September 1976.

Cooperating group(s): Spencer Foundation, Chicago.

38-DB-2 INTELLECTUAL DEVELOPMENT OF MALAYSIAN CHILDREN

Investigator(s): Sylvia Opper, Ph.D., Lecturer, Centre for Educational Studies, Universiti Sains Malaysia, Penang, Malaysia.
Purpose: To investigate differences between age, sex, locality, and ethnic groups in the development of 12 basic logical, scientific, or mathematical Piagetian concepts.
Subjects: 506 children, ages 6 to 16: 246 urban, 260 rural (equally distributed by sex).
Methods: Data were collected by individual interviews using Piagetian clinical methods.
Duration: 1973-1976.
Cooperating group(s): UNICEF, under the auspices of the Curriculum Development Centre, Malaysian Ministry of Education.

38-DB-3 FANTASY INDUCTION AND ITS EFFECT ON CONSERVATION OF NUMBER AND LIQUID

Investigator(s): Samuel Roll, Ph.D., Associate Professor, Department of Psychology, University of New Mexico, Albuquerque, New Mexico 87131.
Purpose: To investigate the degree to which fantasy involvement interferes with conservation responding in tasks of conservation of number and liquid.
Subjects: 140 children, ages 4 to 8, in grades kindergarten to 3.
Methods: Conservation of number and liquid was tested in a standard situation (i.e., without fantasy inducing instructions) and in a situation designed to induce fantasy of high desirability (e.g., lemonade on a very hot day). Analysis of variance was used to test hypotheses.
Findings: Both fantasy producing instructions and the use of highly desirable material have *regressing* effects on younger children but not on older children.
Duration: May 1972-June 1977.
Cooperating group(s): Albuquerque Public Schools
Publications: Roll, S. and Irwin, M. Manipulation of subject involvement and conservation of number and liquid. *Revista Latinoamericana de Psicologia,* 1974, 6, 157-160.

38-DB-4 STIMULUS CONCRETENESS AND VISUAL ATTENTIONAL TRAINING IN CHILDREN'S PICTORIAL PAIRED-ASSOCIATE LEARNING

Investigator(s): Jack Snowman, Ph.D., Assistant Professor, Department of Guidance and Educational Psychology, Southern Illinois University, Carbondale, Illinois 62901.
Purpose: To explore the effects of altering the visual attentional behavior of preoperational stage children and the concreteness levels of pictorial stimuli on paired-associate learning.
Subjects: 99 male and female kindergarten children (average age, 66 months), all of whom were empirically determined to be within the preoperational stage of cognitive development.
Methods: The children learned 24 pictorial paired-associates at one of three levels of concreteness: low detail line drawings, high detail line drawings, and high detail line drawings with a verbal prompt. Within each of these groups, one-third of the subjects received either visual attentional training, no training, or were engaged in an unrelated activity. Recognition of the appropriate response member was the main criterion. A 3×3 analysis of variance was the primary method of statistical analysis.

Findings: The results supported the notion of a concreteness continuum along which pictorial stimuli could be ordered. The attentional training factor was not significant, indicating that the visual attention of preoperational stage children could not be improved using the methods employed.
Duration: September 1974-September 1976.
Publications: Data and results are available from the investigator.

38-DB-5 THE DEVELOPMENT OF STORY COMPREHENSION SKILLS IN CHILDREN

Investigator(s): Nancy L. Stein, Ph.D., Assistant Professor, Department of Psychology, Washington University, St. Louis, Missouri 63130; and Christine G. Glenn, Ph.D., Department of Psychology, Carnegie-Mellon University, Pittsburgh, Pennsylvania 15213. Address correspondence to: Dr. Stein, Department of Psychology, Carnegie-Mellon University.
Purpose: To develop story comprehension skills in children.
Subjects: Approximately 500 girls and boys, ages 4 to 12, have been tested. An equal number of subjects from each age group are normally tested in each experiment.
Methods: Several different procedures have been used in all studies. Recall, reconstruction, discrimination, recognition, and natural story construction abilities have been assessed. All studies have been experimental and well controlled. Each of the nine studies has investigated a separate variable relating to story comprehension.
Findings: A model of story comprehension has been constructed from empirical findings. Both developmental differences and differences caused by the organizational structure of stories have been found.
Duration: 1973-1980.
Cooperating group(s): St. Louis County School District.
Publications: (1) A paper submitted for review to *Cognitive Psychology,* April 1976: Stein, N. L. and Glenn, C. G. An analysis of story comprehension in elementary school children. (2) A paper presented at the Society for Research in Child Development Conference, Denver, Colorado, April 1975: Stein, N. L. and Glenn, C. G. A developmental study of children's recall of story material.

38-DC-1 INTERACTIONS BETWEEN INFANT AND ENVIRONMENT AND LEARNING PROCESSES DURING THE FIRST MONTHS OF LIFE

Investigator(s): A. Pomerleau, Ph.D., Professor; and G. Malcuit, Ph.D., Professor, Department of Psychology, University of Quebec, C. P. 8888, Montreal 101, Quebec, Canada.
Purpose: To analyze cardiac and behavioral responses to different stimuli in neonates and infants in order to evaluate their capacity to orient, acquire information from their environment, and act upon it.
Subjects: Newborn Research (N): 65 normal, full-term female and male neonates, 24 to 120 hours old, divided into six groups according to their behavioral state. Infant Research (I): 50 normal, full-term male and female infants, 4 to 24 weeks old, divided into five groups according to age (cross-sectional).
Methods: (N): Rocking stimulation was presented 20 times during 10 seconds to each subject. Groups were formed according to the behavioral state observed during the session. Heart rate was recorded continuously, and behavior was noted according to specified

categories. (I): Five different toys were presented twice to each infant. Trials lasted 30 seconds. During the first 15 seconds, the toy was 12 to 15 inches from the subject; during the second 15 seconds, the experimenter moved the toy within reaching distance of the subject. Heart rate and behavior were videorecorded continuously.
Findings: In infants, heart rate response differs according to age group.
Duration: (N): August 1975-November 1976; (I): May 1974-August 1976.
Cooperating group(s): National Research Council of Canada.

38-DC-2 INFANT MEMORY PROCESSES

Investigator(s): Gary M. Olson, Ph.D., Assistant Professor, Department of Psychology, University of Michigan, 330 Packard Road, Ann Arbor, Michigan 48104.
Purpose: To study visual and auditory memory abilities in the first year of life.
Subjects: Normal infants of both sexes, ages 3 to 12 months (indefinite number to be studied, 650 have been seen so far).
Methods: Experiments are based on the habituation phenomenon. A computer controlled laboratory is used for the experiments. Many of the experiments incorporate designs that make procedural details contingent upon the infant's behavior.
Duration: January 1974-continuing.
Publications: Olson, G. M. An information processing analysis of visual memory and habituation in infants. In T. J. Tighe and R. N. Lenton (Eds.), *Habituation: Perspectives from child development, animal behavior, and neurophysiology*. Hillsdale, New Jersey: Lawrence Erlbaum, 1976.

38-DD-1 USE AND EVALUATION OF A MARKETED EARLY CHILDHOOD CURRICULUM

Investigator(s): Jeannine Schmid, Ph.D., Assistant Professor, Department of Human Development, Family and Community Relations, State University College at Buffalo, 1300 Elmwood Avenue, Buffalo, New York 14222; and Curt Acredelo, Ph.D., Lecturer, Department of Psychology, State University of New York, Buffalo, New York 14214.
Purpose: To assess the effectiveness of the use of a marketed Piagetian based early childhood curriculum by quasi-professional individuals in a tutorial format.
Subjects: 25 girls and 15 boys, ages 33 to 62 months, who attend a college day care center, and whose parents are either undergraduates or teachers at the college. Over the course of 8 months, many parents withdrew their children from the center. The final assessment included 10 experimentals (seven girls and three boys) and eight controls (five girls and three boys).
Methods: Twenty of the 40 children were randomly selected to be experimental subjects and receive tutorials. Tutorials consisted of a 15-minute enrichment experience once a week over an 8-month period. A posttest-only design was used, since it was free of experimental invalidity. A testing instrument was developed covering seriation, classification, conservation, and spatial knowledge.
Findings: The experimental group showed significantly higher levels of reasoning than control group children in areas of conservation and classification (p .037, Fisher's exact test). A quasi-professional use of this marketed curriculum is suggested.
Duration: Fall 1974-completed.
Publications: Copies of a 13-page report [illegible]e testing instrument (including videotape demonstration) are available from Dr. Schm[illegible]d.

38-DD-2 DEVELOPMENT OF CULTURE-SPECIFIC TESTING INSTRUMENTS

Investigator(s): Robert L. Williams, Ph.D., Senior Psychologist, Institute of Black Studies, Inc., 6372 Delmar Boulevard, St. Louis, Missouri 63130.
Purpose: To develop tests for intelligence and personality among Black Americans, using each Black American's awareness of his cultural experience as the basis for constructing the tests.
Subjects: 1,320 black subjects, 120 from each of 11 states representing five regions of the United States (Northeast, Southeast, Southwest, West, and Midwest). Subjects were evenly divided between sexes at ten 3-year age intervals (e.g., 15 to 18, 18 to 21, etc.).
Methods: Subjects were rated on six instruments: Williams Awareness Sentence Completion, Williams Survey Questionnaire A & B, Black Opinion Scale, Black Intelligence Test, and Black Preference Inventory. Items on each instrument are being analyzed for internal consistency, and individual responses are being correlated across tests.
Duration: June 1974-May 1977.
Cooperating group(s): National Institute of Minority Mental Health; U. S. Department of Health, Education, and Welfare.
Publications: Results will be published by the Institute of Black Studies, Inc., Winter 1977.

38-DF-1 DEVELOPMENTAL ASPECTS OF IMPRESSION FORMATION FROM CONSISTENT AND DISCREPANT PORTRAYALS

Investigator(s): W. Andrew Collins, Ph.D., Associate Professor, Institute of Child Development, University of Minnesota, Minneapolis, Minnesota 55455.
Purpose: To examine developmental changes in forming impressions from discrepant portrayals; i.e., to investigate the distinctness of and the relationship between developmental differences in recognizing and resolving discrepancy and differences in forming coherent impressions from any series of past encounters (portrayals).
Subjects: 72 boys and girls, 24 each in third, seventh, and eleventh grades, from middle class schools in Minneapolis-St. Paul.
Methods: Children watched four scenes from a dramatic TV series in one of three conditions: (1) main actor's behavior was portrayed as good in two scenes and neutral in two others, as judged by children in pretests; (2) actor's behavior was bad in two scenes, neutral in two scenes; and (3) actor's behavior was good in two scenes, bad in two scenes. Subjects were asked to describe the character and answered standardized questions about him. Responses were analyzed for content and organization, using a coding scheme developed by the authors and their colleagues.
Duration: September 1975-September 1976.
Cooperating group(s): John and Mary R. Markle Foundation.
Publications: Information is available from Dr. Collins.

38-DF-2 COGNITIVE PROCESSING COMPONENTS OF INDIVIDUAL AND DEVELOPMENTAL DIFFERENCES IN TESTED ABILITY

Investigator(s): Daniel P. Keating, Ph.D., Assistant Professor, Institute of Child Development, University of Minnesota, Minneapolis, Minnesota 55455.

Purpose: To investigate underlying information processing components of different tested levels of ability.
Subjects: 60 middle to upper middle class girls and boys, ages 8, 13, and 17. Twenty children each from grades 3, 7, and 11 were divided into high and low groups.
Methods: Three experiments were conducted. Experiment 1 dealt with the difference between simple reaction time (SRT) and two-choice reaction time (CRT). Experiment 2 concerned long-term memory code arousal utilizing the Posner *et al.* (1969) distinction between name and physical codes in a card sorting task. Experiment 3 used a Sternberg paradigm to investigate short-term memory scanning.
Findings: In all three experiments older children and those in the high group demonstrated faster overall performance. The crucial findings, however, concern the various interactions between ability, age, and experimental level indicating processing differences. In Experiment 1 older children were differentially faster than younger children on CRT relative to SRT: $F(2,48) = 49.28$, $p < .001$. In addition, subjects in the high groups had marginally faster choice reaction times than subjects in the low groups: $F(1, 48) = 2.81$, $p < .10$. Thus, reaction time that required choice was decidedly more difficult for younger children and somewhat more difficult for children of low ability. Experiment 2 demonstrated that, regardless of age, subjects in the high groups were better able to arouse conceptual codes (name condition) than subjects in the low groups: $F(1, 48) = 12.63$, $p < .001$. Age and experimental level did interact: $F(2,48) = 4.07$, $p < .05$, indicating that older children were better able to call upon name codes than younger children. No interaction was found between age, ability, and experimental level. In the final experiment, an analysis of the slope of the best fitting line in the Sternberg task indicated that subjects of high ability had faster scanning times than subjects of low ability: $F(2,48) = 2.82$, $p < .07$. While age did not interact with scanning time (slope), it interacted with noncentral processing characteristics (y intercept) with older children being far faster: $F(2,48) = 35.60$, $p < .001$. Therefore, it seems that actual memory scanning is strongly related to ability; whereas, response and other peripheral characteristics increase with age. These results taken together make a strong case for information processing differences underlying tested mental performance. This conclusion is emphasized by the fact that the central processing variables of CRT-SRT, Name-Physical sorting, and the slope in the Sternberg task yield a multiple r of .72 predicting PMC performance. In addition, these three variables have an average correlation with PMC of .51, and an average intercorrelation with each other of only .27. The abilities to make rapid choices, arouse LTM conceptual codes, and scan STM rapidly appear to be distinct processes all of which are predictive of differences in tested ability.
Duration: January 1976-September 1976.
Cooperating group(s): University of Minnesota, Graduate School Grant.

38-DF-3 REASONING SKILLS AND SEMANTIC MEMORY IN CHILDREN

Investigator(s): Ellin K. Scholnick, Ph.D., Professor; and Janet W. Johnson, Ph.D., Assistant Professor, Department of Psychology, University of Maryland, College Park, Maryland 20742.
Purpose: To discover whether a child's ability to solve reasoning problems in class inclusion and seriation predicts the extent to which children organize hierarchically or make transitive inferences about semantic information.
Subjects: 64 children in grades 3 and 4.
Methods: Subjects were selected who fell into one of four groups on the basis of Piagetian tests: those who could seriate and understand class inclusion, those who could only

seriate, those who could do only class inclusion, and those who did neither. The children listened to stories for rote memorization which included material susceptible to inferences. Subjects were tested for recognition of true and false facts and true and false inferences about the material.
Findings: While, in general, more inferences were recognized by children with the specific reasoning skills, there was not a one-to-one correspondence between reasoning in problem solving tasks and reasoning in reorganizing memory.
Duration: February 1976-February 1977.

38-DF-4 CLASSIFICATION SKILLS AND CUEING CONDITIONS IN FREE RECALL OF FAMILIAR AND NEW WORDS AMONG THIRD AND FOURTH GRADERS

Investigator(s): Pauline C. Grippin, Ph.D., Associate Professor, The College of St. Rose, 432 Western Avenue, Albany, New York 12203.
Purpose: To test the hypotheses that Piagetian described classification operations mediate the storage and retrieval of familiar and unfamiliar words; and that the level of abstraction of cue words mediates storage and retrieval of same.
Subjects: 81 boys and girls in grades 3 and 4 of public and private schools.
Methods: Subjects were assessed on a hierarchical class inclusion task which required them to (1) subsume chickens in the class of birds, (2) distinguish birds from other winged animals (e.g., insects), and (3) subsume all winged animals under the superordinate animals. Scores were trichotomized, and subjects were randomly assigned to one of three cueing conditions in a conceptually categorized recall task. The recall task consisted of 30 words which were blocked according to conceptual category (animal: four legged, fish, bird; plant: fruit, vegetable, flower) with four words and one paralog per category. The treatment was operationalized by answer booklets provided to each subject. The children received either no cues, two superordinate cues, or six subordinate cues.
Findings: Both classification skills and cueing conditions were significant effects for familiar words. Only classifications skills were significant for unfamiliar words.
Duration: Spring 1975-Fall 1976.

38-DG-1 COORDINATION OF AUDITORY AND VISUAL ATTENTION IN THE FIRST YEAR OF LIFE

Investigator(s): Harry McGurk, Ph.D., Lecturer; and John MacDonald, M.Sc., Research Fellow, Department of Psychology, University of Surrey, Guildford, Surrey, England.
Purpose: To plot the development of coordination and integration between auditory and visual perception.
Subjects: 120 male and female infants, ages 0 to 12 months.
Methods: The research design follows a standard habituation-dishabituation paradigm involving simultaneous presentation of auditory and visual stimuli. Data are analyzed for habituation and recovery effects in both modalities.
Findings: Provisional analysis of data indicates that by age 6 months infants are capable of simultaneous processing of auditory and visual information.
Duration: September 1973-November 1976.
Cooperating group(s): United Kingdom Social Science Research Council.
Publications: Space perception in early infancy: Perception within a common auditory visual space? *Science*, November 1974, 186(15), 649-650.

38-DH-1 COMPARISON OF VOCABULARY OF INNER-CITY FIRST GRADERS WITH COMMON VOCABULARY IN READERS

Investigator(s): Beatrice L. Kachuck, Ph.D., Assistant Professor, School of Education, Brooklyn College, City University of New York, Brooklyn, New York 11210.
Purpose: To find out if inner-city first grade black children are familiar with words commonly found in first grade reading texts.
Subjects: 20 monolingual children, born in mainland U.S.A., randomly selected at the beginning of first grade in an inner-city New York City school.
Methods: Speech samples were collected by having each child select picture books and tell stories about the pictures. Thirty-minute interviews were recorded. Vocabulary in speech samples was compared to vocabulary in three published lists: Harris and Jacobson First Grade Core Vocabulary, Fry First Grade Instant Words, and Dolch Primary Common Words and Common Nouns. Calculations of percentages of words that occurred in speech were made.
Findings: Percent of words on published lists which occurred in speech ranged from 93 to 97. Incidental comparison among lists showed that 25 percent of Dolch words are not common in first grade reading texts.
Duration: September 1975-March 1976.
Publications: Data and results are available from the investigator at cost.

38-DH-2 COMPARISON OF SYNTAX IN ELEMENTARY SCHOOL READERS AND IN READING TEXTS

Investigator(s): Beatrice L. Kachuck, Ph.D., Assistant Professor, School of Education, Brooklyn College, City University of New York, Brooklyn, New York 11210.
Purpose: To explore the correspondence of syntactic demands in texts and in reading achievement tests at the same grade levels.
Subjects: A content analysis of six basal reader series for all grade levels was made. Series were compared to corresponding levels of comprehension subtests of two standardized reading achievement tests.
Methods: Sixteen syntactic structures representing complexities in derivation from deep structure were identified in books and tests at each grade level. Correspondence was sought by performing multinomial tests for differences in frequencies of distribution.
Findings: A search for patterns of increasing complexity across grades in four series of books shows overall increase in numbers of complexities, sharp increases in totals between the first two and last two grades, but no evidence of planning for introduction or rates of increase in presenting particular structures.
Duration: September 1975-September 1976.
Cooperating group(s): Faculty Research Award Program, City University of New York.
Publications: Data and results are available from the investigator at cost.

38-DH-3 PERFORMANCE OF MINORITY CHILDREN ON THE UTAH TEST OF LANGUAGE DEVELOPMENT

Investigator(s): Merlin J. Mecham, Ph.D., Professor and Director, Department of Speech Pathology and Audiology, 1201 Behavioral Sciences Building, University of Utah, Salt Lake City, Utah 84112.
Purpose: To establish tentative validation for three groups of minority children on the Utah Test of Language Development (UTLD).

Subjects: 54 Indian children from two reservations (North Dakota and Arizona); 63 Chicano children from central city residency areas (Phoenix and Los Angeles); and 36 black children from suburban residency areas (Decatur, Georgia).
Methods: Experimental subjects and their matched peer Caucasian neighbor children were given the UTLD by advanced graduate students acting under university supervision. Performance scores of the minority children were compared with those of their Caucasian peers and with original UTLD normative data.
Findings: Performance of the three groups of minority children tested was fairly comparable to performance of their Caucasian peers and differed only minimally from the UTLD normative data. This suggests that the UTLD is moderately resistive to influences imposed by cultural differences. Ordinal difficulty of items on the UTLD was highly consistent across subcultures (coefficient of concordance was .97).
Duration: 1974-1976.
Cooperating group(s): (1) Georgia State University. (2) Minot State College. (3) Arizona State University. (4) California State University-Fullerton.
Publications: A copy of an unpublished paper is available from the investigator.

38-DH-4 THE ACQUISITION OF COMPLEX LANGUAGE STRUCTURES BY CHILDREN

Investigator(s): Thomas Roeper, Ph.D., Assistant Professor; and S. Jay Keyser, Ph.D., Professor, Department of Linguistics, South College, University of Massachusetts, Amherst, Massachusetts 01002.
Purpose: To determine the nature of an hypothesis-generator for language; i.e., how children, ages 5 to 12, acquire specific structures and rules in stress, phonology, syntax, and semantic interpretation.
Subjects: 30 girls and boys, ages 3 to 6.
Methods: A game-like atmosphere was created in which to elicit children's sentences, preferences in grammatical forms, and choices among pictures. Older children were asked to read nonsense and real words. There was nothing coercive, corrective, or frustrating for the children. No rewards were given. Analysis of percentages was performed on the data.
Duration: September 1975-August 1976.
Cooperating group(s): National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare.
Publications: University of Massachusetts Occasional Papers.

38-DH-5 THE LANGUAGE SKILLS REQUIRED FOR SCHOOLING

Investigator(s): Marion Blank, Ph.D., Professor, Department of Psychiatry, Rutgers Medical School, Piscataway, New Jersey 08854.
Purpose: To assess the reasons for the high rate of failure among children from lower class backgrounds.
Subjects: 288 preschool children, ages 3.0 to 5.11 (144 middle class; 144 lower class).
Methods: The children were tested on a comprehensive test designed to assess four major areas of language deemed necessary if classroom dialogue is to be understood.
Findings: As the abstraction demands increase, the greater is the discrepancy between the lower and the middle class child.
Duration: 1972-1976.

38-DH-6 THE ACQUISITION OF THE "EASY TO PLEASE" CONSTRUCTION

Investigator(s): Lawrence Solan, B.A., Graduate Student, Department of Linguistics, University of Massachusetts, Amherst, Massachusetts 01002.
Purpose: To determine the order in which children acquire the sentence types (a) Mary is pretty to look at, (b) Mary is easy to please, and (c) Mary is eager to please; and to examine the implication the results have for linguistic theory.
Subjects: Nine boys and eight girls, ages 3 to 5, all of whom were interviewed at day care centers they attended.
Methods: Children held a hand puppet of a monkey in one hand, and a hand puppet of a tiger in the other. The experimenter read sentences of the forms (a) through (c), and the child acted out the sentences with the puppets. There were four examples of each sentence type. Following each response, the experimenter made written notes of the child's actions. Examples: The monkey is easy to bite. The monkey is easy to hit.
Findings: It was found that children learned these constructions in the order (c), (b), (a). That (c) was easier than (b) confirmed results by Carol Chomsky. That (a) was the most difficult can be explained by positing structural differences between (a) and (b).
Duration: October 1975-May 1976.
Publications: Data are available from the investigator.

38-DH-7 LONGITUDINAL STUDY OF PSYCHOLINGUISTIC SKILLS IN RURAL CHILDREN

Investigator(s): Milly Cowles, Ph.D., Professor and Associate Dean, School of Education; and Kathryn Daniel, Ph.D., Director of Research, School of Nursing, University of Alabama, Birmingham, Alabama 35294.
Purpose: To analyze the growth and/or regression patterns in psycholinguistic behaviors of children in enriched educational environments.
Subjects: 40 boys and 40 girls, ages 5 through 9, who live in a rural area (80 percent of the children are black).
Methods: Children were randomly selected in kindergarten and followed for 5 years. The primary instrument used was the Illinois Test of Psycholinguistic Abilities.
Duration: Fall 1968-Spring 1977.
Cooperating group(s): Williamsburg County School District.

38-DH-8 COMPOSITION IN THE INTERMEDIATE STAGE OF THE COMPREHENSIVE SCHOOL

Investigator(s): Ebbe Lindell, Ph.D., Scientific Leader; Ann Martinsson, Ph.D., Research Leader; Barbro Lundquist, Ph.D., Research Assistant; and Inga-Lill Pettersson, Ph.D., Research Assistant, Department of Educational and Psychological Research, Malmö School of Education, Fack, 200 45, Malmö 23 Sweden.
Purpose: To study the language used in children's compositions, their attitudes toward writing, the effects of experiments with varying degrees of guidance, and differences in linguistic ability related to sex and social background.
Subjects: 97 boys and 94 girls, age 10.
Methods: The children were studied during 3 successive years. Research instruments were linguistic variables in the compositions, composition grades, and language tests of the children. Statistical treatment consisted primarily of analysis of variance, factor analysis, and correlations.
Findings: The most important feature, showing high correlations with the essay grades, is

productivity (e.g., the number of words and number of different words in an essay). The experiments with varying degrees of guidance could not show that a particular type of essay subject is in every respect better than others. The girls were superior in linguistic ability. Social differences in linguistic ability are negligible.
Duration: 1970-1977.

38-DH-9 LANGUAGE USE AND CONTEXT: VERBAL INTERACTION OF 4-YEAR OLDS AND THEIR MOTHERS IN NATURALISTIC AND EXPERIMENTAL SITUATIONS

Investigator(s): Margaret Martlew, Ph.D., Lecturer, Department of Psychology, University of Sheffield, Western Bank, Sheffield, United Kingdom S10 2TN.
Purpose: To examine speech recorded in various contexts, in order to explore relationships between the child's use of language in the nursery to verbal interaction with his mother in a play situation and when she directs him on a specified referential communication task.
Subjects: Six boys and four girls, ages 4.2 to 4.7, who were all leaving the nursery to attend first school. The children came from neither extreme of the socioeconomic scale.
Methods: Subjects comprised two groups of five children each, who attended the same nursery at different times. Speech recordings were made using a video microphone in naturalistic settings and a Sony stereo cassette in experimental situations. The categories used for analyses cover form function and dialogue together with other aspects of language use such as effectiveness and redundancy. The measures taken included frequency counts and correlations and nonparametric tests.
Duration: January 1976-January 1977.

Personality

38-EA-1 BEHAVIORAL CORRELATES OF SCORES OF SCHOOL BOYS ON AN OBJECTIVE, NONVERBAL TEST OF PERSONALITY

Investigator(s): Jerome D. Pauker, Ph.D., Research Director and Chief Psychologist, Family Court Clinic, Clarke Institute of Psychiatry, 8th Floor, 950 Yonge Street, Toronto, Ontario, Canada M4W 2J4.
Purpose: To determine the behavioral correlates of scores on eight Missouri Children's Picture Series Scales (MCPS): conformity, masculinity-femininity, maturity, aggression, inhibition, activity level, sleep disturbance, and somatization.
Subjects: 115 school boys (67 blacks, 48 whites), ages 6 to 12.
Methods: The MCPS (238 picture cards sorted into two piles: those that look like fun and those that do not) and the Wechsler Intelligence Scale for Children (WISC) were administered. Descriptive statements in the boys' school records were abstracted. A dictionary of coded descriptors was developed. Boys with similar personality test scores were matched for age and WISC Full Scale IQ, and the two groups in each paired set were compared for frequency of each descriptor (significance of differences between proportions).
Findings: A large proportion of boys who are high on the MCPS aggression scale are noted in their school records to have been involved in fighting.
Duration: 1971-1977.

38-EA-2 DIMENSION OF BEHAVIOR DERIVED FROM FACTOR ANALYSIS OF THE CHILD/ADOLESCENT BEHAVIOR PROFILE

Investigator(s): Corbett H. Turner, M.D., Associate Professor, Psychiatry and Preventive Medicine; and Donna R. Brogan, Ph.D., Associate Professor, Biometry and Statistics, Children's Clinic, Emory University, 1711 Aidmore Drive, N.E., Atlanta, Georgia 30307.
Purpose: To develop an assessment instrument that (1) provides useful clinical information concerning the child/adolescent and parents, (2) gives a quantitative measurement of adjustment and behavior, (3) can be used as a screening instrument, and (4) is useful for research purposes such as relating parental expectations to child/adolescent behavior.
Subjects: Children, ages 4 to 18 (62 percent male): 622 patients of various mental health clinics or private psychiatrists, and 187 nonpatient children and adolescents characterized by parents or teachers as being well-adjusted.
Methods: A questionnaire of 50 items describing types of behavior rated in frequency of occurrence on a 7-point scale was done for each subject and then again for an average, well-adjusted child of the same age and sex. The ratings for the actual child section of the Child/Adolescent Behavior Profile questionnaire were analyzed using principal factoring without iteration followed by equimax rotation, and scales were constructed. Scores on the seven scales and the scores of discrepancy from expectations of the respondent for patients were compared with the scores for nonpatients.
Findings: Significant factors were similar within the patient and nonpatient groups. Factors were labeled expressive-inhibited, sociable-isolated, loving-hostile, gentle-aggressive, confident-anxious, stress resistant-fragile, and successful-ineffectual. The scores of patients and nonpatients on scales constructed using these factors are significantly different.
Duration: 1968-1977.
Cooperating group(s): South Central Community Mental Health Center.

38-EA-3 PERSONALITY DEVELOPMENT AMONG EGYPTIAN CHILDREN

Investigator(s): Nicholas V. Ciaccio, Ph.D., Associate Professor, Department of Pychology, American University, 113 Sharia Kasr el Aini, Cairo, Egypt.
Purpose: To study the personality development of a cultural group which has not been investigated previously.
Subjects: 1,500 girls and boys, ages 3 to 12, from Cairo and four other Egyptian governorates.
Methods: Children are studied as they play or work; within their own homes, or in maternal health care clinics, day care centers, or primary and secondary schools. Methods have ranged from participant observation of play, work, and family life to structured interviews with parents, children, and project personnel. Psychological tests and behavioral rating scales have also been utilized.
Findings: The original frame of reference was to study the validity of Erikson's themes of personality development among nonwestern groups. His stage theory holds up fairly well for middle class children, but breaks down completely for children of lower class backgrounds.
Duration: December 1973-January 1978.
Publications: Ciaccio, N. V. Erikson's theory in cross-cultural perspective: Social class and ethnicity in "third world" communities. In J. Meacham and K. Riegel (Eds.), *The developing individual in a changing world.* The Hague: Mouton, 1976.

38-EA-4 POSITIVE AND NEGATIVE EMOTIONAL RESPONSES IN INFANTS: FINDINGS FROM A CROSS-CULTURAL STUDY

Investigator(s): C. W. Greenbaum, Ph.D., Senior Lecturer; and Rivka Londau, Ph.D., Lecturer, Department of Psychology, Hebrew University, Jerusalem, Israel.
Purpose: To investigate the extent to which maturational or environmental factors influence the expressions of crying, fussing, smiling, and laughing during the first year of life.
Subjects: 96 male infants, ages 2, 4, 7, and 11 months, from the middle and lower classes in the city, the kibbutz, the Bedouin, and in institutions.
Methods: The infants were observed in their natural surroundings for the equivalent of a complete working day. The observational system used was comprised of 111 categories of responses relating to the infant's behavior and 107 relating to the behavior of people who interact with the infant. The observer followed the infant wherever he was during the observation period but always remained in the background.
Findings: The transition from the predominance of maturational control over behavior to the predominance of environmental influence seems to occur before 2 months for fussing, 4 months for smiling, and 7 months for laughing.
Duration: 1967-continuing.
Cooperating group(s): (1) Bureau of Research; Office of Education; Education Division; U. S. Department of Health, Education, and Welfare. (2) Hebrew University, Human Development Center; Research and Development Authority; Paul Baerwald School of Social Work. (3) Joint Distribution Committee, U. S. A.
Publications: Extent to which the mother represents the social stimulation to which the infant is exposed: Findings from a cross-cultural study. *Developmental Psychology* (in press).

38-EB-1 THE DEVELOPMENT OF THE SELF-CONCEPT IN ADOLESCENCE

Investigator(s): Jerome B. Dusek, Ph.D., Associate Professor, Psychology Department, Syracuse University, Syracuse, New York 13210.
Purpose: To study the development of the self-concept during childhood and adolescence in a longitudinal study; to assess the development of interests in children and adolescents; and to relate interests and their development to self-concept.
Subjects: Approximately 100 girls and boys at each grade level, 5 through 12. Cohort samples are added during each of the 3 years of the study, approximately 50 subjects at each grade level each year. Each cohort includes approximately 50 lower and 50 higher socioeconomic class subjects, about half males and half females.
Methods: A mixed longitudinal, cross-sectional design was used with 10 cohorts covering the 5th through 12th grades and a 3-year longitudinal span. A 7-point, 21-pair semantic differential self-concept scale and a questionnaire on adolescent interests developed during previous research were administered to subjects. Factor analysis as well as univariate methods of analysis are the primary modes of data analysis.
Findings: Data indicate interests and self-concept are independent, not supporting the notion of a directive function of self-concept. There is no evidence of upheaval in self-concept during adolescent years, but longitudinal data are not yet available. Factor structures support previous research.
Duration: May 1975-April 1978.
Cooperating group(s): National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare.

38-EB-2 THE RELATIONSHIP OF BODY CONCEPT AND SPATIAL RELATIONS IN THE 3- TO 5½-YEAR OLD

Investigator(s): Suzanne Brunner, M.S., Instructor, School of Nursing, University of Maryland, 655 West Lombard Street, Baltimore, Maryland 21201.
Purpose: To determine the relationship of body concept to spatial relations in the 3- to 5½-year-old child.
Subjects: 43 preschool children, 37 to 63 months, who attended a middle class, urban preschool in Baltimore, Maryland.
Methods: Each child was asked (1) to draw a picture of himself which was scored utilizing the developmental criteria established by Koppitz, and (2) to participate in two spatial relations tasks developed by Meyer. The scores were correlated utilizing the Pearson Product Moment Correlation formula.
Findings: The correlation between the human figure drawing (HFD) and spatial relation tasks (SRT) was .141 (hypothesis rejected). However, many questions were raised because the scoring procedures for the SRT provided for very little variance. Other variables such as sex, race, time in preschool, ordinal position, and time spent in day care failed to show a significant contribution to the small correlation that was obtained.
Duration: January 1976-completed.
Cooperating group(s): Bolton Hill Nursery School, Baltimore, Maryland.
Publications: Information is available from the investigator.

38-EB-3 DEVELOPMENT OF POSITIVE SELF-REGARD IN PRESCHOOL CHILDREN

Investigator(s): Lucie W. Barber, Ed.D., Director, Applied Research, Character Research Project, Union College, 207 State Street, Schenectady, New York 12305.
Purpose: To help parents assess the normal developmental level of their child by using the seven Barber Scales of Self-Regard; and to demonstrate to parents how to encourage step-by-step progress of their child toward a positive self-image.
Subjects: 351 parents were involved in the 1974 and 1975 field testing of the Scales of Self-Regard. These families ranged widely on demographic variables but predominantly represented the middle class across the United States. The samples for field testing curricular materials has yet to be determined.
Methods: Volunteer samples were used in the field tests of the scales. Analysis included computer programs for correlation matrices and contingency tables. Content analyses, t-tests, and rho correlations were employed on select subsamples. Future plans include the marketing of three sets of materials: (1) the Scales of Self-Regard, a Parent Guide, a Leader Manual, a technical manual, and tape recordings for each of the seven scales; (2) similar to (1) with the addition of curricular materials (design stage completed) for each scale point for every scale; and (3) a package of materials for teachers of early childhood development classes. The design of field tests for these products is in progress. (See also *Research Relating to Children, Bulletin 33,* March-August 1974, Study 33-EB-3, p. 49; and Study 38-AA-8 in this bulletin.)
Findings: Results of the field tests of the Scales of Self-Regard demonstrate their usefulness, reliability, and validity. Mothers and day care center teachers appear to know the child better than fathers or teachers in general. Demographic variables, sex of child, and geographical location do not appear to influence scale point ratings. Age of child correlates highly with scale point, although wide variations for individual children exist. Assessment-based individualized instruction by parents is strongly indicated.
Duration: 1973-1977.

Cooperating group(s): National Association of Episcopal Schools.
Publications: (1) Barber, L. W. and Peatling, J. H. *A manual for the Barber Scales of Self-Regard.* Schenectady, New York: Character Research Press, 1976. (2) Barber, L. W. Preschool Scales of Self-Regard: A report of field testing research. *Character Potential,* April 1976, 7(4). (3) *Parents' Packet for Barber Scales of Self-Regard for Preschool Children.* Schenectady, New York: Character Research Press, 1975. (4) Barber, L. W. Assessing self-concept in preschool children. *Character Potential,* August 1975, 7(3). (5) *A profile of a child's self-regard.* Schenectady, New York: Character Research Press, 1975.

38-EB-4 EARLY ADOLESCENCE AND THE SELF-IMAGE: THE ROLE OF THE JUNIOR HIGH SCHOOL

Investigator(s): Roberta G. Simmons, Ph.D., Professor of Sociology and Psychiatry, Department of Sociology, University of Minnesota, 114 Social Science Building, Minneapolis, Minnesota 55455.
Purpose: To investigate the impact of pubertal development and environmental change upon the self-esteem of early adolescents as they move from 6th into 7th grade in two different school types: K-8 and K-6/7-9.
Subjects: 798 girls and boys, ages 11 to 13. Half the students are black, and half are white students selected from a stratified random sample of 18 schools.
Methods: Half of the population, randomly selected, was interviewed in the fall of 6th grade; the other half, in the spring. These same children were interviewed again in the same season of their 7th grade year. In addition, they were weighed and measured by nurses in both years to gain some knowledge of their pubertal development. The principals of the K-8, K-6, and 7-9 schools were interviewed to assess the facilities of the schools and to indicate which students in the sample were prone to delinquency, truancy, and absenteeism. Grades and scholastic aptitude tests were obtained.
Findings: Early adolescent girls appear more vulnerable than boys in both 6th and 7th grades in terms of self-esteem ($p = .02$ in both cases). White girls are particularly likely to exhibit low self-esteem. Secondly, girls regard the female sex role as less advantageous than boys regard the male sex role at this age. Girls find movement into a junior high school more stressful for their self-picture than remaining in a K-8 system. Junior high girls are more likely than K-8 girls to exhibit low self-esteem, even in the spring of 7th grade. The environmental change of movement into junior high school does not appear to have detrimental effects for the male students.
Duration: 1974-1978.
Cooperating group(s): (1) Wisconsin Survey Research Laboratories, Madison and Milwaukee. (2) Grant Foundation, Inc., New York, New York.

38-EC-1 SOCIAL INFLUENCE ON CHILDREN'S STANDARDS

Investigator(s): Herbert D. Saltzstein, Ph.D., Associate Professor, Department of Psychology, Lehman College of the City University of New York, Bronx, New York 10468.
Purpose: To study the transfer or carryover of social influence effects on the judgments of children and adults across stimulus items; and to determine how direct and transfer effects are related to the age and sex of the subject, and to the social influence conditions.

Subjects: Second through eighth graders, and young adults.
Methods: Subjects read (or heard) two criminal cases, and twice assigned sentences in each case. After giving their first sentence, they were shown the judge's sentence which was widely discrepant (harsher) than their own original sentence. Then they gave a second sentence. The change from the first to the second sentence was the main measure of direct influence. They then read or heard a second case and imposed two sentences in that case. The difference between the first sentence in Case 1 and the first sentence in Case 2 was the measure of transfer, or indirect influence. Cases were counterbalanced and the experimental conditions compared to a control condition to exclude the influence of other factors. In a second experiment, 80 fourth, fifth, and sixth grade children were each interviewed three times, for approximately 30 to 60 minutes per interview. The first (pretraining) interview was to assess their stage of moral reasoning using Kohlberg's method and three of his moral dilemmas (stories). During the second session, half the children were given training in taking the perspectives of characters in a moral dilemma that had not been pretested. This training consisted of asking the children to answer questions from the point of view of (as if they were) one of several characters in the hypothetical situation. Perspectives were rapidly alternated to induce cognitive conflict. The rest of the children were individually interviewed on the same story but not given the role-taking training. All the children were reinterviewed weeks later on two stories, including one which had been pretested but neither of which had been involved in training.
Findings: Indirect influence (transfer) has been shown to be substantially greater than direct influence effects, using criminal sentences as judgments, with adults and children. With children (grades 3 to 8), direct influence declined with age, but indirect influence did not change with age.
Duration: May 1974-April 1977.
Cooperating group(s): National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare.
Publications: (1) Saltzstein, H. *et al.* Direct and indirect influence on children's legal judgments. *Developmental Psychology* (in press). (2) Saltzstein, H. and Sandberg, L. The relative effectiveness of direct and indirect persuasion. *Journal of Psychology*, 1975, 91, 39-48.

38-EC-2 STUDIES OF SELF-CONTROL IN CHILDREN

Investigator(s): Ignatius J. Toner, Ph.D., Assistant Professor, Department of Psychology, University of North Carolina, UNCC Station, Charlotte, North Carolina 28223.
Purpose: To determine those variables that significantly affect the degree of self-regulation demonstrated by children.
Subjects: Preschool and grade school boys and girls from lower and middle class homes.
Methods: Two self-regulatory behaviors have been the foci of ongoing research. First, self-imposed delay of gratification is measured in a game setting in which possession of accumulating candy rewards is made contingent upon the child's stopping further accumulation. Second, resistance to deviation behavior is assessed in a setting in which the child is observed following instructions not to touch a set of attractive toys.
Findings: Self-control cannot be considered a trait in young children. Self-imposed delay of gratification can be affected by the content of overt utterances that preschool children make while waiting. Resistance to deviation in children can be significantly increased by exposing them to *good* models with the effect lasting at least 1 week.
Duration: 1969-continuing.

Cooperating group(s): (1) University of Wisconsin, U. S. Public Health Training Grant. (2) University of North Carolina-Charlotte, Faculty Grant Committee.
Publications: (1) Toner, I. J. *et al.* Reflection-impulsivity and self-control in preschool children. *Child Development* (in press). (2) A paper presented at the meeting of the Society for Research in Child Development, Denver, Colorado, April 1975: Toner, I. J. and Smith, R. A. Overt verbalization and delay maintenance behavior in preschool children. (3) Toner, I. J. Maintenance of delay behavior in grade school children. *Psychological Reports,* 1974, 34, 1247-1250. (4) A paper presented at the meeting of the Midwestern Psychological Association, Chicago, Illinois, May 1973: Toner, I. J. and Parke, R. D. Imitation of resistance to deviation.

38-EF-1 CHILDREN'S ATTITUDES TOWARD DEATH

Investigator(s): April Zweig, Ph.D., Post-Doctoral Fellow, Institute for Juvenile Research, 1735 West Taylor Street, Chicago, Illinois 60612.
Purpose: To answer the questions: (1) What are children's attitudes toward death? (2) How are these attitudes related to age, sex, and experience with death? and (3) How are these attitudes organized?
Subjects: 115 black, Christian children: 68 girls and 47 boys, ages 8 to 12; and 23 white, Jewish children: 19 boys and 4 girls, ages 10 to 11.
Methods: Sixty-two items on a structured response questionnaire were conceptually organized into 11 component constructs: death is temporary, death is considered a person, death is universal, death is the cessation of biological functioning, death is caused by aggression, there are degrees of death, death anxieties, discussion of death, learning about death, expressive adaptation, and knowing parents' views of death. Statistical treatment of the data included analyses of variance, t-tests, and factor analyses.
Findings: Significant differences were found with respect to age, sex, and experience with death on several constructs. Significant differences between lower socioeconomic black children and middle class white children were found with respect to several issues.
Duration: January 1975-June 1976.
Cooperating group(s): (1) Chicago Youth Centers. (2) KAM Isaiah Israel Temple.

38-EF-2 PERCEPTIONS OF CHILDREN TOWARD INTENSIVE MEDICAL PROCEDURES

Investigator(s): Eugenia H. Waechter, R.N., Ph.D., Associate Professor, Department of Family Health Care Nursing, University of California, San Francisco, California 94143.
Purpose: To investigate the responses, fears, and concerns of children, who attend outpatient clinics for treatment of chronic or fatal illnesses, to selected procedures involving body procedures; and to investigate factors unrelated to diagnosis that influence response to such procedures.
Subjects: 60 children, ages 4 to 10, who attend outpatient clinics. The children were diagnosed as having leukemia and other cancer, cystic fibrosis, renal disease, and diabetes.
Methods: Methods included a tape recorded interview with parents, child observation, and administration to the children of a modification of the Thematic Apperception Test. Responses of groups were compared.
Duration: September 1973-December 1976.
Cooperating group(s): University of California Outpatient Clinics.
Publications: Waechter, E. H. Taking it one day at a time. *Children Today* (in press).

38-EF-3 THE EFFECTS OF THE COGNITIVE CONTROL OF LEVELING-SHARPENING ON THE RESPONSE OF CHILDREN TO STRESS

Investigator(s): Reuben M. Schonebaum, Ph.D., Assistant Professor; and Rosalind Kalb, M.A., Graduate Student, Department of Psychology, Fordham University, Bronx, New York 10458.
Purpose: To ascertain whether pediatric surgery patients demonstrate adaptive shifts in the cognitive control of leveling-sharpening which enables them to respond to surgery more effectively.
Subjects: 60 girls and boys, ages 7 to 11, from the lower-middle and lower classes: ⅓, surgery patients; ⅓, outpatients; ⅓, school children.
Methods: The basic design involved repeated measures on three groups of children: a surgery group, a nonsurgical clinical group, and a school group. The children were administered the House Test for Leveling-Sharpening and the General Anxiety Scale for Children on two separate occasions. In addition, urine was collected from the surgery and clinic patients for cortisol measurements. The data will be analyzed by correlation.
Duration: June 1976-June 1977.
Cooperating group(s): Montefiore Hospital, Bronx, New York.

38-EF-4 CHILDREN'S EXPERIENCES OF FIRE

Investigator(s): Luitgard Wundheiler, Ph.D., Professor, Department of Education, Long Island University, The Brooklyn Center, Brooklyn, New York 11201.
Purpose: To investigate children's coping styles after disasters; in this case, after they had lost their homes through fires.
Subjects: 20 boys and 15 girls, ages 3 to 6, who are culturally deprived.
Methods: Data were collected in a day care center and consisted of content analysis of anecdotal behavior records of 3 hours of free play for each child.
Findings: Only 16 children engaged in dramatic play involving fire. Most children established a *social position* during the first few days at the center, apparently to increase their sense of security.
Duration: Fall 1972-January 1977.
Cooperating group(s): Jewish Board of Guardians.
Publications: Information on this study will be contained in a monograph series, Psycho-Social Issues, published by the Jewish Board of Guardians, 120 West 57th Street, New York, New York 10019.

38-EF-5 ALIENATION AND ENVIRONMENTAL INTEGRATION OF ADOLESCENTS

Investigator(s): J. R. Newbrough, Ph.D., Coordinator; and David McMillan, Ph.D., Project Coordinator, Center for Community Studies, George Peabody College for Teachers, Nashville, Tennessee 37203; and Bettina Adelberg, Ph.D., Co-Investigator, Man Environment Systems, College of Human Development, Pennsylvania State University, University Park, Pennsylvania 16802.
Purpose: To examine the intrapsychic and behavioral effects on adolescents of age and environmental segregation of the adolescent from important and significant roles in behavior settings.
Subjects: 50 girls and boys, ages 13 to 14, who are normal, 8th grade, public school students.
Methods: This is a correlational study using various traditional pencil and paper measures

of alienation, self-esteem, internal-external locus of control, anxiety, and depression. These measures were taken three times a year. They will be correlated with environmental measures taken via interview about the behavior settings entered during the previous days. The environmental units and settings characteristics are adapted from the work of Roger Barker and his colleagues. The environmental measures will be supplemented by school and community behavior setting surveys. These measures will be correlated with grades, absentee records, and other school records.

Findings: A preliminary study of moods experienced in settings and setting-related variables—such as penetration (i.e., the level of marginal or central participation in the setting), subjective judgments of reinforcement value of the setting, involvement in the setting, and congruence of a person's expectations of what they thought they would experience with their actual experience—found that the subjective measures were highly correlated with emotionality in settings, but the objective behavioral measure was not correlated in an important way with the self-report of emotions experienced in the setting.

Duration: July 1976-January 1978.

Cooperating group(s): National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare.

Social

38-FA-1 SOCIAL AND COGNITIVE DEVELOPMENT IN INFANCY

Investigator(s): Toni Antonucci, Ph.D., Assistant Professor, Department of Psychology, 331 Huntington Hall, Syracuse University, Syracuse, New York 13210.

Purpose: To examine the relationship between mother-child interactive behaviors, contingency learning, and response decrement in 7-month olds; and to examine the relationship between attachment and object-permanence in a subset of the sample population at 13 months.

Subjects: 159 male and female, 7-month-old (plus or minus 2 weeks) normal infants; and their mothers. All subjects were volunteers. Forty-one of these infants were re-examined at 13 months.

Methods: At 7 months, all infants were observed in a waiting room type situation with their mothers for 20 minutes. All infants were exposed to a contingency learning situation and received two of three types of reinforcement: nonsocial, social-stranger, and social-mother. Infant's response decrement to a redundant signal was then examined. At 13 months, the infant's object-person permanence was examined and they were each exposed to the Ainsworth strange-situation.

Duration: October 1974-continuing.

38-FA-2 THE DEVELOPMENT OF INTERPERSONAL SKILLS DURING ADOLESCENCE

Investigator(s): Barbara M. Newman, Ph.D., Assistant Professor, Department of Psychology, Russell Sage College, Troy, New York 12180.

Purpose: To test the hypothesis that adolescent egocentrism will interfere with the capacity to generate multiple hypotheses about interpersonal interactions.

Subjects: 162 girls and 141 boys, ages 10 years 9 months to 19 years, in grades 6 through 11.

Methods: A cross-sectional sample of children was presented with six taped conversations. Two class groups at each grade level were included. A forced choice questionnaire about the conversations was used to permit subjects to identify the possible meanings of the interactions for both participants. A total score for the six conversations was based on the number of correct interpretations which were checked.
Findings: A two-way analysis of variance by grade and sex showed significant grade, sex, and grade X sex interaction effects. Total score correlated .22 with verbal intelligence. The pattern of scores was U shaped. Youngest subjects scored highest, eighth grade subjects scored lowest.
Duration: January 1975-June 1977.
Cooperating group(s): (1) Russell Sage College, Faculty Research Grant. (2) Burnt Hills-Ballston Lake School District, Burnt Hills, New York.

38-FA-3 FRIENDSHIP PATTERNS IN OPEN AND TRADITIONAL CLASSROOMS

Investigator(s): Maureen T. Hallinan, Ph.D., Associate Professor, Department of Sociology, Stanford University, Stanford, California 94305.
Purpose: To determine the effect of variation in the amount of interaction permitted in the classroom context on patterns of friendship formation and development.
Subjects: 200 girls and boys, ages 9 to 13, from nine classes of predominantly white, 4th, 5th, and 6th graders in open and traditional schools.
Methods: Longitudinal sociometric data were collected from the subjects. Measures of deviation of group structure from random models were employed as well as a stochastic model of change in structure. Data included class size, measures of the number of mutual, asymmetric and null dyads and intransitive triads, duration of dyad types, etc. Data were based on children's responses to a sociometric questionnaire asking them who were their friends and best friends.
Findings: Open classrooms contained less hierarchical choices, less stable fewer asymmetric choices, and less stable and fewer intransitive triads.
Duration: September 1974-February 1976.
Cooperating group(s): (1) Spencer Foundation. (2) National Institute of Education; U. S. Department of Health, Education, and Welfare.
Publications: Hallinan, M. T. Friendship patterns in open and traditional classrooms. *Sociology of Education*, October 1976.

38-FA-4 PEERS AS SOCIALIZATION AGENTS FOR LOW-SOCIABLE CHILDREN

Investigator(s): Wyndol Furman, B.A., Graduate Assistant; and Willard W. Hartup, Ed.D., Professor, Institute of Child Development, University of Minnesota, Minneapolis, Minnesota 55455.
Purpose: To assess the value of peers as socialization agents for low-sociable children.
Subjects: 18 boys and 18 girls, ages 3 to 5, who were identified as low-sociable.
Methods: Target subjects were selected from the population of children attending six day care centers. They were identified as low-sociable on the basis of extensive observations. One-third of the children were provided extra class experiences with younger children; one-third with older children; and one-third did not have extra class peer experience. Changes in sociability were assessed both during the extra class sessions and in behavior in the day care center during and following intervention.

Duration: September 1975-December 1976.
Cooperating group(s): National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare.

38-FA-5 COACHING SKILLS FOR FRIENDSHIP MAKING

Investigator(s): Steven Asher, Ph.D., Assistant Professor; and Shelley Hymel, M.A., Graduate Student, Department of Educational Psychology, University of Illinois, Urbana, Illinois 61801; and Sherri Oden, Ph.D., Assistant Professor, College of Education, University of Rochester, Rochester, New York 14627.
Purpose: To identify strategies for teaching social skills to children who lack friends.
Subjects: Third, fourth, and fifth graders: approximately 10 classrooms per study.
Methods: Children who are socially isolated in class are randomly assigned to different types of social skill training conditions. Short-term and long-term sociometric follow-up assessments are made.
Findings: Verbally coaching social skills (e.g., communication, cooperation) produces significant and lasting changes in children's peer acceptance.
Duration: September 1973-continuing.
Publications: (1) Asher, Oden, and Gottman. Children's friendships in school settings. In L. G. Katz (Ed.), *Current Topics in Early Childhood Education. Volume 1.* Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1977. (2) A paper presented at the annual meeting of the American Educational Research Association, San Francisco, California, 1976: Oden, Asher, and Hymel. Coaching third and fourth grade isolated children in social skills.

38-FB-1 THE IMPACT OF WOMEN'S LIBERATION ON CHILDREN'S SEX ROLE STEREOTYPES

Investigator(s): Catherine Emihovich, B.S., Doctoral Student; and Eugene L. Gaier, Ph.D., Chairman and Professor, Department of Educational Psychology, State University of New York, 379 Baldy Hall, Amherst, New York 14260. Address correspondence to Dr. Gaier.
Purpose: To ascertain the nature of the perceptions of sex differences concerning children's perceptions of appropriate sex role behaviors; and to assess the nature of the existence of the interaction effects existing between a child's sex and his/her sex role behaviors, attitudes toward women's liberation, and favorite nonschool activities.
Subjects: 312 white children, ages 10 to 14, evenly distributed between boys and girls and socioeconomic levels.
Methods: Subjects were asked to complete a 22-item questionnaire dealing with sex role behaviors. Eleven questions dealt with girls' roles and the other half with boys' roles. The two dependent variables were a male stereotype score and a female stereotype score. Three main effects were utilized in the design: sex effect, favorite activity effect, and attitudes about women's liberation effect. The statistical design was a three-way multivariate analysis of covariance, with age and socioeconomic status as a covariate.
Findings: Males demonstrated higher sex role stereotyping than did females. However, although the analysis is still in progress, there is reason to believe that strong interaction effects will surface; males who feel positively about women's liberation will show less stereotyping for the male role than males who feel negatively. Thus far, no developmental trends are evident.
Duration: November 1975-February 1977.

38-FC-1 FACTORS MAINTAINING DRINKING IN ALCOHOLIC FAMILIES

Investigator(s): Peter Steinglass, M.D., Assistant Professor, Department of Psychiatry and Behavioral Sciences, Center for Family Research, George Washington University Medical Center, 613 Ross Hall, 2300 Eye Street, N.W., Washington, D. C. 20037.
Purpose: To elucidate factors contributing to the maintenance of pathological drinking in alcoholic families.
Subjects: Intact families with one member who is having or has had a problem with alcohol abuse, including any children over age 12, who wish to participate.
Methods: The families are being studied in a multimethod naturalistic design that collects observational data about structural components of interactional behavior in three settings: in-home observations, multiple family discussion groups, and family interaction laboratory.
Duration: June 1974-May 1980.
Cooperating group(s): National Institute of Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

38-FC-2 LONG-TERM EFFECTS OF A SMOKING AWARENESS PROGRAM

Investigator(s): Linda L. Pederson, M.A., Research Associate, Departments of Medicine, University of Western Ontario; R. Stennet, Ph.D., Research Director, London Board of Education; and N. M. Lefcoe, M.D., Director, Pulmonary Unit, Victoria Hospital, London, Ontario, Canada.
Purpose: To evaluate the effects of a smoking education program on the smoking behavior of children in grades 7 to 9.
Subjects: 3,000 fourth, fifth, and sixth graders, who are enrolled in 20 public schools in London, Ontario, Canada.
Methods: The children, who are tested prior to and after exposure to the program, will be compared with control groups who are tested at the same times but have no program exposure.
Findings: Short-term studies indicate little change in knowledge, attitudes, and behavior. Pre-exposure findings indicate continuing increases in smoking among this age group.
Duration: 1974-1980.
Cooperating group(s): Middlesex Lung Association.

38-FE-1 VISUAL BEHAVIOR IN TEACHER-PUPIL DYADS

Investigator(s): Terry Hore, Ph.D., Director, Higher Education Advisory and Research Unit, Monash University, Wellington Road, Clayton 3168, Victoria, Australia.
Purpose: To study the visual behavior of teachers and pupils, both Australian and immigrant, during a learning sequence.
Subjects: 57 dyads: 32 female and 25 male teachers and 29 boys and 28 girls: 21 Australian children; 18 immigrants who had been in Australia an average of 7 years; and 18 immigrant children who had been in Australia an average of 1.2 years.
Methods: Unknown to participants, videotapes of the face of each member of the dyad were taken as they played a game which required them to discuss cartoon drawings. Each set of drawings contained a *transmitter's* card which had one figure, and a *receiver's* card which had six numbered figures, only one of which was identical to that on the transmitter's card. Split-screen images of each face recorded on videotape provided the data for

later analysis. The tapes were analyzed to provide frequency and duration information on mutual gaze and nonmutual gaze. A $3 \times 2 \times 2$ factorial design was used (group × teacher sex × child sex).

Findings: There were highly significant and robust effects for mutual and nonmutual glances with no other main or interaction effects. The recently migrated children showed more than twice the amount of mutual gaze and nonmutual gaze for more than twice the amount of time over the other two groups.

Duration: 1972-1976.

Cooperating group(s): Australian Research Grants Committee.

Publications: A mimeographed copy of the study is available from the investigator.

38-FE-2 THE SOCIAL CONTEXT OF MEDIA USE

Investigator(s): F. Gerald Kline, Ph.D., Associate Professor, Department of Journalism, University of Michigan, 2040 Literature, Science and The Arts Building, Ann Arbor, Michigan 48104.

Purpose: To study adolescent information acquisition.

Subjects: 600 adolescents, ages 14 to 17, in two-parent households in Flint, Michigan and Toledo, Ohio. Mothers and fathers of Flint, Michigan adolescents and up to four peers per adolescent for both cities were interviewed. Each data point is a sociometric group of no more than seven (one adolescent, four peers, and two parents).

Methods: Subjects were randomly assigned to three conditions in each city in a Solomon-4 design, and four experiments were run alternately in each city manipulating radio public service spots deal ing with each experimental topic: family planning, occupations, drugs, and alcohol.

Duration: June 1972-December 1977.

Cooperating group(s): (1) Markle Foundation. (2) University of Michigan, Population Studies Program. (3) National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

Publications: (1) Morrison, A. J.; Kline, F. G.; Miller, P. V. Adolescents alcohol and drug information. In R. Ostman (Ed.), *Communication research and drug education.* Beverly Hills, California: Sage Publications, Inc., 1976. (2) Kline, F. G.; Miller, P. V.; and Morrison, A. J. Adolescents and family planning information: An exploration of audience needs and media effects. In J. G. Blumler and E. Katz (Eds.), *The uses and gratifications approach to mass communication research.* Beverly Hills, California: Sage Publications, Inc., 1976.

38-FE-3 THE IMPACT OF TELEVISION ON HUMAN DEVELOPMENT AND COMMUNITY LIFE

Investigator(s): Tannis MacBeth Williams, Ph.D., Assistant Professor and Project Director; and Raymond S. Corteen, Ph.D.; Gloria Gutman, Ph.D.; Meredith Kimball, Ph.D.; Peter Suedfeld, Ph.D.; and Merle L. Zabrack, Ph.D., Faculty Members, Department of Psychology, University of British Columbia, Vancouver, B. C., Canada V6T 1W5.

Purpose: To determine how the presence or absence of television in a community affects the children and adults residing there, and how it affects the community in a broader sense.

Subjects: Children in grades 1 through 12; and adults in three communities who participated individually and in groups. The three towns varied in television reception. One was without TV, another had one channel of Canadian TV, and one had one Canadian and three U. S. channels.
Methods: The towns were studied both cross-sectionally and longitudinally. Measures were made in 1973-74 and again in 1975-76, 2 years after the town that had been without television reception got it. Media use and cognitive, perceptual, motivational, environmental, and personality measures were given. Various characteristics; e.g., aggression and creativity, were assessed through comparisons of measures obtained before and after the inception of television.
Duration: Fall 1973-Spring 1977.
Cooperating group(s): Canada Council.

38-FE-4 NONVERBAL BEHAVIOR IN INTERAGE INTERACTION

Investigator(s): Robert S. Feldman, Ph.D., Assistant Professor, Department of Psychology, Virginia Commonwealth University, Richmond, Virginia 23284.
Purpose: To examine the nature of and developmental changes in children's nonverbal behavior.
Subjects: Children, ages 3 through adolescence: both sexes, blacks and whites.
Methods: Specific questions will be raised regarding children's control over nonverbal encoding, decoding accuracy, reciprocation of nonverbal behaviors, nonverbal role playing skills, the relationship between encoding and decoding, and subcultural differences in encoding and decoding. Laboratory experimental techniques will be the primary source of data. Subjects will be videotaped in various experimental situations, and their nonverbal behavior will be analyzed by both trained coders and naive observers. The trained coders provide objective data, which show the specific behaviors emitted, while the naive observers' reactions give information about the decodability of subjects' behavior. Each experiment is intended to give information regarding encoding and decoding.
Findings: Developmental age differences have been found in decoding skills, nonverbal betrayal of underlying attitude in children, and differences in nonverbal behavior as a function of race of interactant in dyadic settings.
Duration: January 1974-December 1978.
Publications: Technical Reports #305, #343, and #365 are available from: Wisconsin Research and Development Center for Cognitive Learning, Madison, Wisconsin 53706.

38-FE-5 THE RELATIONSHIP BETWEEN NONVERBAL EXPRESSIVENESS AND SKIN CONDUCTANCE RESPONDING IN PRESCHOOL CHILDREN

Investigator(s): Ross W. Buck, Ph.D., Associate Professor, Communication Division U85, University of Connecticut, Storrs, Connecticut 06268.
Purpose: To investigate whether a negative relationship between nonverbal expressiveness and skin conductance (SC) responding found in adults also exists in preschool children. (It is suggested that if the relationship does not exist in young children, it may develop during social learning. If the relationship does exist in children, it may be based upon innate temperamental factors.)
Subjects: 10 boys and 9 girls, ages 49 to 71 months (median age, 61 months), enrolled in the University preschool.

Methods: Children viewed affective color slides while, unknown to them, their mother watched their faces via closed circuit TV. The mother made judgments about the slides based on the child's facial expressions. Nonverbal expressiveness was defined according to the accuracy of the mother's judgments and was related to the child's SC responses to the slides.

Findings: Strong negative relationships were found between the child's expressiveness and the SC response to the slides; i.e., expressive children had more SC responses to the slides.

Duration: Spring 1974-continuing.

Cooperating group(s): National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service, U. S. Department of Health, Education, and Welfare.

Publications: Preliminary results were reported at the Eastern Psychological Association Meeting, New York, 1975.

38-FE-6 MEANING AND MASTERY IN INVISIBLE SOCIAL SIGNALS

Investigator(s): Gail Zivin, Ph.D., Assistant Professor of Communication, Annenberg School of Communications, University of Pennsylvania, 3620 Walnut Street, Philadelphia, Pennsylvania 19174.

Purpose: To locate social structure contexts and sociokinesic rules for making and perceiving two facial-postural gestures that predict conflict win or lose; to determine how the gestures affect win or lose (i.e., why do they appear to function as signals); and to trace the changes with age.

Subjects: 93 children: eight girls and eight boys, ages 2½ to 4; 12 boys and 11 girls, ages 4 to 5; 26 children, ages 7 to 10; 11 children, ages 14 to 16; and 17 graduate students. All children are of academically associated, upwardly mobile backgrounds.

Methods: Data are collected by videotape records of interpersonal interaction in each classroom, sociometric hierarchies of peers' toughness status, interviews yielding peers' perceived social characteristics, and predictions of conflict outcomes on standard videotapes that do and do not have the facial gestures as potential cues to outcomes. (Children, ages 2½ to 4, yielded only videotaped interaction records.) Analyses look toward (1) frequency of face-making and receiving as related to hierarchy position of interactants; (2) age differences in temporal contextual personal style and physical completeness properties of face-making situations that make faces seem more *invisible* with age; (3) ethogrammatic description by transitional probabilities of behaviors that relate face-making to outcomes; and (4) the interrelations among perception of faces, social status, tendency to face-making, situation of frequent face-making, age, and social acceptance by the group.

Findings: Two configurations of the facial components observed in preschoolers predict win or loss outcomes at significant 50 to 67 percent levels, while the other faces predict at no higher than 5 to 7 percent of conflict situations. Frequency of win-predicting face-making is directly, and significantly, related among preschoolers and 7- to 10-year olds to peers' *toughness* rankings. The relation shifts with age such that in high rankers, more win-predicting faces are made in nonconflictful than in conflictful situations. Between preschool and ages 7 to 10, making of win-predicting faces goes from random directioning on the status hierarchy to the patterned directioning toward persons of similar or higher status only. By age 7 to 10, the making of win-predicting faces becomes an element of self-presentation in nonconflictful interpersonal style among the higher ranking children.

Duration: 1974-continuing.

Cooperating group(s): (1) Guggenheim Foundation. (2) University of Pennsylvania, Children's Center and Graduate School of Education. (3) University City New School. (4) Miquon Upper School.

Publications: (1) A paper presented at the Animal Behavior Society Meeting, Boulder, Colorado, June 1976: Zivin, G. Age and social rank modifications in the use of facial gestures. (2) A paper presented at the Third International Human Ethology Workshop, Sheffield, England, 1975: Zivin, G. Preschoolers' facial-postural status messages. (3) A paper presented at the Eastern Psychological Association Meeting, New York, April 1975: Zivin, G. Facial gestures as status signals in preschool boys.

SPECIAL GROUPS OF CHILDREN

Physically Handicapped

38-GB-1 STUDIES OF HANDICAPPED CHILDREN: WHOM DO TEACHERS IDENTIFY?

Investigator(s): Patricia A. Craig, Ph.D., Policy Analyst, Stanford Research Institute, Menlo Park, California 94025.
Purpose: To examine the characteristics of children identified by teachers as handicapped across race, socioeconomic status, and demographic variables using National Center for Health Statistics data.
Subjects: 14,185 randomly selected, noninstitutionalized children, ages 6 to 17.
Methods: The baseline data used in this analysis were a series of unpublished cross-tabulations of information collected by the National Center for Health Statistics in its health examination surveys of children and youth. These surveys were conducted between 1963 and 1970. Multiple assessments were collected on each subject. Data sources included a medical examination by a pediatrician; psychological and ability tests given by a psychologist; teacher assessment; parental assessment; and, in the case of the 12- to 17-year-old population, a personal assessment.
Findings: Children from low income families are identified at significantly higher rates by teachers as requiring special education services. Blacks are identified at higher rates than whites by teachers as needing special resources for mental retardation and emotional disturbance.
Duration: 1963-completed.
Publications: Craig, P. A. and McEachron, N. B. *Studies of handicapped students. Vol. 1. Whom do teachers identify as handicapped*? Research Report 4537-11. Menlo Park, California: Stanford Research Institute, 1975.

38-GC-1 ANXIETY AND LOCUS OF CONTROL IN HYPOPITUITARY DWARF CHILDREN

Investigator(s): Brian Stabler, Ph.D., Assistant Professor; and Louis Underwood, M.D., Associate Professor, School of Medicine, Department of Psychiatry, University of North Carolina, Chapel Hill, North Carolina 27514.
Purpose: To assess intergroup effects of short stature on anxiety levels and locus of control.
Subjects: 35 children, ages 8 to 16 (male to female ratio 9:1), who suffered primary hypopituitary malfunction; and a control group of age matched children with chronic, nonfatal conditions not involving short stature.
Methods: Subjects were administered the Children's Locus of Control Scale (Bialer, 1961), State-Trait Anxiety Inventory for Children (Spielberger, 1973), and Mother-Child Relationship Evaluation (Roth, 1961).
Findings: There were no significant differences between groups on all measures.
Duration: August 1975-August 1976.
Publications: Presented at the American Psychological Association Meeting, Washington, D. C., 1976.

38-GC-2 CROSS-MODAL FORM PERCEPTION IN SPINA BIFIDA HYDROCEPHALIC CHILDREN

Investigator(s): David Gitler, Ph.D., Assistant Director, Research and Training, Institute of Rehabilitation Medicine, New York University Medical Center, 400 East 34th Street, New York, New York 10016.

Purpose: To study the effects of hydrocephalus (shunted) on the development of transfer of form between the visual and haptic modalities.

Subjects: 54 children, ages 4 to 14: 18 spina bifida with hydrocephalus, 18 spina bifida without hydrocephalus, and 18 normal siblings. All children had verbal IQ's above 80; none had another CNS disorder (i.e., encephalitis); none were completely Spanish-speaking; none had sensory or motor problems in the upper extremities; and none had uncorrected visual deficits.

Methods: On the basis of prior studies by Birch, Lefford, and others, it was hypothesized that children with spina bifida and hydrocephalus would have specific cross-modal deficits. Three matching procedures were used to assess intramodal competence: (1) smooth haptic-smooth haptic, (2) rough haptic-rough haptic, and (3) visual-visual. Four matching procedures were used to assess cross-modal competence: (1) smooth haptic to visual, (2) visual to smooth haptic, (3) rough haptic to visual, and (4) visual to rough haptic. The order of the seven procedures was randomized. In all procedures, one of four forms was presented and kept standard. A series of forms was then presented for matching. The forms were the circle, square, diamond, and triangle from the Seguin Form Board Test. In each paired-comparison the child was asked if the forms were "the same or different." Preferred hand (for drawing) was used in all haptic procedures.

Findings: In all groups, children younger than 7 made similar intramodal and cross-modal errors. Hydrocephalic children older than 7 did not show improvements in either intramodal or cross-modal tasks. Multivariate discriminant function analysis showed that cross-modal error was of a greater magnitude than intramodal error. Furthermore, within the hydrocephalic group, those children who were most disabled made the greater number of cross-modal errors. These results indicated a specific cross-modal deficit. Subjective response biases were not found in any of the three groups. Texture did not enhance matching, and there were no differences associated with the direction of transfer. Hydrocephalic children made the greatest number of errors in response to the square form. Overlap between the hydrocephalic and nonhydrocephalic groups was found also, suggesting the existence of a minimal hydrocephalus in some children diagnosed as nonhydrocephalic.

Duration: 1973-completed.

Publications: An abstract is available from the investigator.

38-GC-3 DEVELOPMENT AND EVALUATION OF INTELLIGENCE AND INTENTIONAL ACTIVITY IN SEVERELY INVOLVED QUADRIPLEGIC CHILDREN WITH IMPLICATIONS FOR PROGRAMMING

Investigator(s): Rita Simon, Ph.D., Research Fellow, Institute of Rehabilitation Medicine, New York University Medical Center, 400 East 34th Street, New York, New York 10016.

Purpose: To study the vicissitudes of cognition and intention in a population severely deprived of average-expectable sensory motor experience in infancy; and to evaluate the validity of and explore the alternatives to standard motor based infant tests for intelligence evaluation in a quadriplegic population.

Subjects: 100 quadriplegic children, ages 1 to 10; and 30 di- and hemiplegic control children, ages 1 to 10.
Methods: A demographic study was made and included all intellectual evaluations by age and type of test. Test scores were charted from infancy through the present. Test results were examined as a function of the nature of the test, age at which given, severity of involvement, amount of programming, home environment, sex, socioeconomic status, etc. Teacher questionnaires were distributed involving intelligence and programming of the children. The questionnaire relates to estimates by teachers of the child's intellectual level, the kinds of behaviors contributing to his/her estimate, and the nature of his/her program with the child.
Duration: October 1974-January 1977.
Cooperating group(s): National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

38-GD-1 BLADDER DISTENTION IN NORMAL, DIURNAL ENURETIC AND NOCTURNAL ENURETIC CHILDREN: AN OBSERVATIONAL STUDY

Investigator(s): Ian Berg, M.D., Consultant Child Psychiatrist, Leeds Area Health Authority and Yorkshire Regional Health Authority, 7 Stone Rings Close, Harrogate, North Yorkshire, England; and Dorothy Fielding, M.Sc., Senior Psychologist, High Royds Hospital, Leeds, England.
Purpose: To study the relationship between functional bladder capacity and the motor features of urgency and patterns of incontinence.
Subjects: 30 children: 10 normal, 10 night wetters, and 10 day and night wetters, matched for age, sex, height, and weight.
Methods: Children are observed individually using a one-way screen. Each child is given an oral water load and watched in a play situation. Various postures and movements are rated.
Findings: A study of 40 day and night wetters compared with 46 night wetters has shown the importance of urgency and psychiatric disturbance in the occurrence of day wetting.
Duration: 1974-1978.

38-GD-2 RELATIONSHIP OF MATERNAL HORMONE THERAPY TO CARDIAC DEVELOPMENT

Investigator(s): Charlotte Ferencz, M.D., M.P.H., Professor and Acting Chairman, Department of Social and Preventive Medicine, School of Medicine, University of Maryland, 31 South Greene Street, Baltimore, Maryland 21201.
Purpose: To establish whether a history of hormone taking before and during early pregnancy is more frequent among mothers of infants with cono-truncal malformations of the heart than in control mothers.
Subjects: The mothers of all children born since January 1, 1972, with cardiovascular malformations including transposition of the great arteries, Tetralogy of Fallot, trunkus arteriosus, and pulmonary atresia with intact ventricular septum ascertained. The subjects reside in the region served by the Maryland Intensive Care Nursery Unit.
Methods: A matched pair case/controls design is being used; matching on all factors relevant to hormone taking in mothers (age, parity, previous fetal loss, socioeconomic

status). A comparison group of randomly selected controls and of a severe cardiovascular malformation as a recall control are included. Controls are included from birth at the same hospital adjacent to the birth of the index case.
Duration: September 1975-September 1978.
Cooperating group(s): (1) National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) Johns Hopkins School of Hygiene and Public Health. (3) Johns Hopkins Hospital. (4) Baltimore City Hospitals. (5) University of Maryland, Department of Pediatrics. (6) Community hospitals utilizing the Regional Intensive Care Unit.

38-GE-1 SCHOOL INTEGRATION OF DISABLED CHILDREN AND YOUNG PERSONS

Investigator(s): Karl-Gustaf Stukát, Professor and Scientific Leader; Karin Paulsson, Project Leader; and Lars-Göran Grip and Lena Gratte, Assistants, Department of Educational Research, Mölndal School of Education, Fack S-431 20 Mölndal, Sweden.
Purpose: To make a comparative study describing the school situation of the disabled student and how this situation affects the teacher and other members of the class, in order to elucidate the terms on which orthopedically disabled children can be integrated in ordinary schools, in ordinary classes, in classes for slow learners, and in special classes for orthopedically handicapped students; and to consider any effects that school placement may have upon the therapeutic and recreational situation of the disabled child.
Subjects: Parents and teachers of all (approximately 1,500) orthopedically disabled elementary school students in Sweden; and 240 students randomly selected from the total population (80 from ordinary classes, 80 from special classes for disabled students, and 80 from special classes for slow learners).
Methods: The study was divided into two phases: a questionnaire phase, and an interview phase. Questionnaires were sent to all parents and teachers of orthopedically disabled elementary school students in Sweden. Information was solicited on background variables (age, sex, degree of handicap) and choice of school placement. Using the questionnaire findings, the interview group was selected. Interviews were comprised of standard questions, either open ended or multiple choice. Information collected will include the way (if any) in which the students' leisure situation is affected by various factors, in addition to in depth information on questions covered in the questionnaire.
Duration: 1976-1977.

38-GE-2 CHILD AMPUTEE PROSTHETICS PROJECT

Investigator(s): Yoshio Setoguchi, M.D., Medical Director, Child Amputee Prosthetics Project, University of California, 1000 Veteran Avenue, Room 25-26, Los Angeles, California 90024.
Purpose: To design and develop new prosthetic components for child amputees.
Subjects: Children, ages 0 to 21, with limb deficiencies or amputations.
Methods: Prosthetic components designed stress a practical approach based upon patient needs and emphasize early application to patients. Based upon clinical needs determined by clinical staff, research and development staff set up design criteria. This was followed by construction of a single prototype, bench testing the design concept, consultation with the machinist, production of mold and/or fabrica-

tion procedures, production of several models of the prototypes, clinical trials, evaluation of findings, and further research and design.

Findings: Phase one of the evaluation of a new terminal device for children is completed; excellent acceptance and functional gain. New artificial foot, new shoulder joint—looks promising. A multiposition opposition post has just been developed for clinical trial.

Duration: November 1967-October 1977.

Cooperating group(s): Bureau of Community Health Service; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: Progress and final reports will be submitted to the Bureau of Community Health Service.

38-GE-3 FIELD TESTING AND FINAL MODIFICATION OF TWO AIDS FOR THE NONVOCAL EXTREMELY MOTOR IMPAIRED CHILD

Investigator(s): Gregg C. Vanderheiden, M.S., Director; Craig S. Holt, B.S., Project Director; and David P. Kelso, B.S., Technical Director, Trace Research and Development Center for the Severely Communicatively Handicapped, University of Wisconsin, Madison, Wisconsin 53706.

Purpose: To complete the development of two communication aids which have important features: portability, visibility, correctable display, capability to be used by nonspelling children, and versatility for users with widely varying skills.

Subjects: Two cerebral palsied children of elementary school age, who are nonvocal, nonambulatory, and severely physically involved.

Methods: The field test will involve seven aids placed in the field: two with specific children, four at centers for the physically handicapped, and one at the center for the mentally retarded. Data on the aids will be collected through questionnaires, personal interviews, and miniature data recorders within the aids which provide a full record of the use of the aid.

Findings: One of the aids has been developed to complete prototype form, and the other is in bench prototype form.

Duration: March 1976-August 1977.

38-GE-4 PROJECT LITERACY

Investigator(s): Wendell W. Fewell, M.S., Curriculum Projects Director, Indiana School for the Deaf, 1200 East 42nd Street, Indianapolis, Indiana 46205.

Purpose: To improve reading readiness and reading in primary level deaf students in preschool through grade 2.

Subjects: 122 boys and girls, ages 3 to 10, enrolled in grade levels preschool through second grade at the Indiana School for the Deaf.

Methods: This study is an ongoing program of assistance, research, and printing of written materials for developing better reading skills, habits, and attitudes on the elementary level at the Indiana School for the Deaf. The project involves (1) the determination of the basic reading skills required of deaf students, the readiness skills required, and the activities needed to develop these skills; (2) the development of original reading and testing

materials, the adaptation of commercially produced materials; and (3) inservice training of teachers. Project workers have screened commercial materials, developed materials for the use of the children, adapted and composed reading tests, readiness tests, and perception and motor skills tests. Testing materials used by the group included the Santa Clara Inventory of Developmental Tasks; the Frostig Visual Perception Test; the Gates-MacGinitie Reading Test; and STEPS (System for Teacher Evaluation of Prereading Skills). The group has also developed some skills tests using the Dolch Sight Word List, several levels of a Reading Skills Test, and is also using the Scott, Foresman Skills Assessment Tests for the primary level. Since visual memory appears to be a problem with deaf children, the group is trying the Visual Memory parts of the Slingerland Language Screening Test. The tests were used experimentally, since not enough data exist to decide which tests will be used on a permanent basis. Project workers consulted with supervising teachers, a language consultant, an expert on autism, and a reading consultant. Periodicals and magazines pertaining to young children and the hearing impaired have been read. Periodical articles that pertain to the group's work have been abstracted, materials have been developed including a prereading assessments skills record, four levels of reading skills tests, rewritten library books, stories to tell, stories to read (follow-up of stories told), and several booklets using research and personal experience for the improvement of reading. The booklets are "Reading + Home, A Vital Combination," "Basic Reading Skills for Deaf Children," and "Developing Sight Vocabulary for Hearing-Impaired Children." The group is working on booklets for teaching directions, visual memory, and reading readiness. A questionnaire study was done involving 27 other schools for the deaf in the United States and Canada. The results were compiled in a booklet which was shared with the cooperating schools.

Findings: Development of reading readiness and reading skills requires specific knowledge and abilities that many teachers have not acquired. Language development for deaf students is inseparable and indispensable to the acquisition of reading skills.

Duration: September 1975-June 1978.

Cooperating group(s): Office of Education; Education Division; U.S. Department of Health, Education, and Welfare.

Publications: End of year reports and materials produced by the staff will be available each year. For information on *Basic Reading Skills for Deaf Students (Primary Level),* write the investigator.

38-GE-5 EFFECT OF SCHOOL INTEGRATION ON SOCIAL COMPETENCE AND ACADEMIC ACHIEVEMENT IN HANDICAPPED CHILDREN AND ON ATTITUDES TOWARD DISABILITY IN NORMAL CHILDREN

Investigator(s): Jessie K. M. Easton, M.D., Assistant Professor, Department of Physical Medicine and Rehabilitation, University of Minnesota, Box 297 Mayo Building, Minneapolis, Minnesota 55455.

Purpose: To obtain data in support of school integration or mainstreaming for the handicapped child.

Subjects: 35 girls and boys, ages 5 to 15, with mixed disabilities (mostly cerebral palsy), who transferred from a separate school for the handicapped to an integrated setting; and a control group of handicapped children who remained in a separate school.

Methods: Baseline studies of academic achievement and social adjustment were obtained at the time of integration for both populations of handicapped children, and will be ob-

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tained each year for 4 years to assess changes over time. Instruments include the Peabody Individual Achievement Test and a social questionnaire developed for the local school population. Normal children's attitudes are assessed using a picture set at the time of the integration, 3 months later, and will be done yearly.
Duration: January 1976-December 1980.
Cooperating group(s): (1) Minneapolis Public Schools. (2) St. Paul Public Schools. (3) University of Minnesota, Graduate School.

38-GE-6 THE EFFECTS OF SELF-HYPNOSIS ON THE MORBIDITY OF HEMOPHILIA

Investigator(s): Karen Olness, M.D., Associate Professor of Pediatrics and Director, Medical Education; and Lawrence Singher, M.D., Associate Professor of Pediatrics, Children's Health Center, University of Minnesota, 2525 Chicago Avenue, Minneapolis, Minnesota 55404.
Purpose: To study the effects of self-hypnosis on the morbidity of hemophilia.
Subjects: Seven hemophiliac boys, ages 3 to 11, who have been diagnosed as having classical hemophilia since infancy.
Methods: The patients have been taught self-hypnosis in regular group meetings for the purposes of relaxation, pain control, and decrease of bleeding. Evaluation consists of subjective descriptions by the boys, family reports, and comparison of numbers of units of replacement therapy required before and after practice of this technique.
Findings: The study has been in progress for 1½ years. Preliminary findings indicate an increased ability to control pain, decreased requirement for replacement therapy, and decreased anxiety in the families afflicted by hemophilia.
Duration: March 1975-March 1979.

38-GE-7 DISCOVERING AND MEETING THE NEEDS OF HISPANIC HEARING IMPAIRED CHILDREN

Investigator(s): Alan Lerman, Ph.D., Research Director; and Edmund L. Cortez, M.Ed., Associate Director, CREED VII, Lexington School for the Deaf, 30th Avenue and 75th Street, Jackson Heights, New York 11370.
Purpose: To determine the needs of the Hispanic hearing impaired child; and to identify those activities that support his academic and affective functioning in school.
Subjects: 783 hearing impaired Hispanic children ages 3 to 17, who attend schools for hearing and language impaired students in New York. The control groups consist of (1) black, non-Hispanic deaf children living below the poverty level, (2) white non-Hispanic deaf children living below the poverty level, and (3) Hispanic deaf children living above the poverty level.
Methods: Data collection will include family interviews, school observations, teacher ratings, and language assessment batteries.
Duration: January 1976-June 1979.
Cooperating group(s): (1) St. Francis de Sales School for the Deaf, Brooklyn, New York. (2) St. Joseph's School for the Deaf, Bronx, New York. (3) Jr. High School No. 47, Manhattan, New York. (4) School for Language and Hearing Impaired Children, New York, New York.
Publications: Data and results will be published by the Division for Handicapped Children of the New York State Education Department.

Mentally Retarded

38-HB-1 THE MAGIC KINGDOM: A PRESCHOOL SCREENING PROGRAM

Investigator(s): William F. Hoehle, II, Ph.D., Director; Kay McDonald, M.S., Community Dynamics Specialist; and William Gingold, Ph.D., Associate Director, Infants' and Young Children's Department; and Marie Bristol, M.A., Ex-Director, Children-Adolescent Services, Southeast Mental Health and Retardation Center, 700 - 1st Avenue South, Fargo, North Dakota 58102.

Purpose: To provide communities, schools, and parents with efficient, low cost screening of 3- to 6-year-old children, so that having identified special needs, services can be provided by local educational associations or by parents if services are not available.

Subjects: In the last fiscal year, 517 preschool children, ages 3 to 6, were screened. The children were residents of Cass, Ransom, Richland, Sargent, Steele, and Traill counties in North Dakota.

Methods: The program utilizes trained parent volunteers to man the castles (stations) in the Magic Kingdom. Summative data are collected from 30 stations. The battery of tests includes motor, visual, auditory, language, self-concept, readiness, vision, hearing, and parental assessment components. One professional screening coordinator is required.

Findings: To date, the data show accurate identification of children with disabilities of the total population screened; 9.8 percent is identified as having some disability.

Duration: 1973-continuing.

Cooperating group(s): (1) Head Start and parent volunteers. (2) Bureau of Education for Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (3) Title XX.

Publications: Publication lists are available from Dr. Hoehle.

38-HB-2 THERAPEUTIC EVALUATION AND TREATMENT CENTER (TETC)

Investigator(s): Roberta Raukar, B.A., Acting Coordinator, Preschool Clinical Services; William Gingold, Ph.D., Associate Director; Marie Bristol, M.A., Ex-Assistant Director, Children-Adolescent Services; and William F. Hoehle, II, Ph.D., Director, Infants' and Young Children's Department, Southeast Mental Health and Retardation Center, 700 - 1st Avenue South, Fargo, North Dakota 58102.

Purpose: To provide prevention, assessment, treatment, and follow-up support for children manifesting significant emotional or behavioral disorders or deviations, or delays in development.

Subjects: Children, ages 3 to 6. In one treatment year, 123 children were seen: 44 were enrolled in ongoing treatment centers, 20 were referred elsewhere, and onsite consultations were provided to receiving or referring agencies for 34 children.

Methods: Subjects retained in TETC programs, after careful assessment, are placed in a data based individual treatment program. Objectives are set and progress is evaluated continously. Parent training and involvement in the individual treatment program are required. Individual treatment programs are carried out at the center four times a week and up to 2 hours daily.

Findings: Training parents and families has been found to be the most effective way to maintain therapeutic gains and provide meaningful aftercare. In reference to child performance, TETC enrollment resulted in mean gains of 8.84 months across social, self-help, gross motor, fine motor, cognitive, and language skills.

Duration: 1973-continuing.
Cooperating group(s): (1) Bureau of Education for Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (2) Title XX.
Publications: Publication lists are available from Dr. Hoehle.

38-HC-1 INVESTIGATION OF DEVELOPMENTAL TRENDS IN MENTALLY RETARDED CHILDREN OVER A PERIOD OF 5 TO 10 YEARS

Investigator(s): K. N. McRae, M.D., Director; Anne E. Bell, M.A., Research Psychologist; and D. S. Abrahamson, M.A., Research Psychologist, Child Development Clinic, Children's Centre, Health Sciences Centre, 685 Bannatyne Avenue, Winnipeg, Manitoba, Canada R3E OW1.
Purpose: To determine whether there has been improvement or regression over time in the intellectual and social development of a group of mentally retarded or borderline children; to ascertain whether the factors determining improvement or regression can be isolated; and to determine whether change is related to etiology, original IQ level, age at first test, social conditions, etc.
Subjects: 38 boys and 17 girls, ages 10 to 16, who had been seen 5 to 10 years previously in the Child Development Clinic. The children were ages 4 to 10 when the first psychometric tests were given. Many had been seen when younger by pediatricians who estimated developmental quotients and investigated the underlying pathology.
Methods: Parents' permission for retests was secured. Information on early psychological testing and the pediatric examination results were available in hospital charts and psychological and pediatric files. Parent interviews were carried on while the child was performing the Wechsler Intelligence Scale for Children-R, tests of visual perception, and measures of reading achievement. Further data regarding achievement and social adjustment were obtained from the schools. Multivariate techniques were used to assess the data.
Findings: Roughly 50 percent of the children made gains in intellectual status. Range of gain was from 1 to 31 points; range of loss, 1 to 27 points. No losses in visual perceptual skills were recorded. Gain or loss is not found to be related to sex, age, IQ when first examined, or etiology as determined by placement in one or another Grossman category. Further assessment is required.
Duration: January 1975-December 1976.
Cooperating group(s): (1) Manitoba Schools. (2) Winnipeg Foundation.
Publications: Prepublication data are available from Child Development Clinic, Health Sciences Centre.

38-HC-2 THE DEVELOPMENT OF TREATMENT TECHNIQUES FOR THE REMEDIATION OF SELF-INJURIOUS BEHAVIOR IN THE CLASSROOM AND HOME

Investigator(s): Robert Gaylord-Ross, Ph.D., Assistant Professor, Department of Special Education, Yeshiva University, 55 Fifth Avenue, New York, New York 10003.
Purpose: To develop and to teach parents and teachers to apply behavior modification techniques to eliminate self-abusive behavior.
Subjects: 40 school age retarded girls and boys, who are chronically self-abusive; i.e., who continuously inflict tissue damage upon themselves.
Methods: Each subject receives an initial baseline condition (13 sessions) where a trainer, teacher, and parent each records the number of self-injurious responses in a half-hour session. After baseline, the trainer successively implements timeout, overcorrection,

positive reinforcement, and omission training reinforcement contingencies. The order of treatment condition implementation is counterbalanced across subjects. Parents and teachers continue baseline through the first phase. Data are analyzed across five conditions and three experimenters with a treatments X treatments analysis of variance (5 X 3 X 40). During the second phase, teachers and then parents begin implementing treatment contingencies.

Duration: September 1976-August 1978.

Cooperating group(s): Bureau of Education for Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare.

38-HE-1 THE UTILITY OF NONSPEECH RESPONSE MODES TO TEACH COMMUNICATION

Investigator(s): John H. Hollis, Ed.D., Associate Professor, Bureau of Child Research Laboratories, 3107 West 21st Street, Topeka, Kansas 66604.

Purpose: To determine what, if any, facilitative effect nonspeech response modes (such as plastic symbol systems and manual communication) have upon the acquisition of speech; to determine the most effective and efficient tactics for bringing about the transfer of linguistic rules from nonspeech to spoken symbol systems; and to determine what, if any, beneficial effects differential motor movements (oral and manual) have upon the acquisition of associations between labels and environmental stimuli and events.

Subjects: 24 nonverbal, severely and profoundly retarded residents of the Kansas Neurological Institute, ages 6 to 32, institutionalized an average of 9 years. No preferences were made regarding etiology, sex, race, or training history in the selection of subjects.

Methods: Research is being conducted using a single subject multiple treatment design. Each subject receives simultaneous training on three matched sets of word stimuli. Stimuli are trained in either a speech, nonspeech (plastic symbol), or sequential (nonspeech then speech) mode. In addition, three subjects also receive training in manual communication (Signing Exact English). Training order is randomized but balanced in terms of trials and order. Training in all three modes includes the skills of identical matching, labeling, sequencing, and finally, meaningful sentence construction. Each subject is trained in individual daily sessions consisting of 40 trials.

Findings: Currently, individual subjects appear to acquire matching and labeling skills more readily when a nonspeech mode, rather than a speech mode, is used. Research has not progressed sufficiently to determine if acquisition of skills in a nonspeech mode will facilitate later speech development. Many of the subjects appear to lack a basic mapping of the environment sufficient to enable them to generalize labels from training to novel representations of the same stimulus. That is, if the children do not match as similar two pictures of chairs, they also do not generalize the label *chair* across both pictures. These tentative results indicate that specific training in environmental similarities and differences precede, or at least complement, language training.

Duration: June 1975-May 1978.

Cooperating group(s): National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

38-HE-2 PERFORMANCE ON LOGICAL AND STRATEGIC TASKS BY RETARDED ADOLESCENTS AND NONRETARDED CHILDREN

Investigator(s): Herman H. Spitz, Ph.D., Director of Research, E. R. Johnstone Training and Research Center, Bordentown, New Jersey 08505.
Purpose: To compare retarded adolescents with nontreated children of equal and lower mental age on logic puzzles and games; and to measure the retardate deficit on these types of tasks.
Subjects: Retarded adolescents: girls and boys with IQs of 40 to 75; and nonretarded girls and boys, ages 6 to 10, with average and above average intelligence.
Methods: Specific logic games and puzzles, such as Tic-Tac-Toe, the Neimark Logic Task, and the Tower of Hanoi, are presented under preset conditions to measure performance. Statistical tests measure whether or not groups perform above chance and indicate at what mental age level retardates perform when compared with nonretardates.
Findings: Retarded groups are profoundly deficient on all these tasks, performing about 2 to 4 years below expectations based on their mental ages.
Duration: March 1975-March 1980.

38-HG-1 LANGUAGE DEVELOPMENT OF EARLY INSTITUTIONALIZED DOWN'S SYNDROME SUBJECTS

Investigator(s): Eva Hubschman, M.A., Director, Department of Speech Pathology, North Jersey Training School, P.O. Box 169, Totowa, New Jersey 07511.
Purpose: To investigate the linguistic development and usage of early institutionalized Down's Syndrome subjects from childhood to adulthood; and to compare this with the early language development of young normal children.
Subjects: Six females, ages 7 to 22, who are Down's Syndrome residents of a state institution for the retarded, and all of whom were institutionalized before they were 4 years old.
Methods: Language samples of spontaneous conversation were collected. These samples were analyzed according to Roger Brown's stages of linguistic development in normal children. Intellectual and linguistic levels of subjects were also evaluated by testing with the Peabody Picture Vocabulary Test, Illinois Test of Psycholinguistic Abilities, and the Leiter Performance Scale. Comprehension was evaluated by the Miller-Yoder Test of Comprehension. Data were analyzed by analysis of variance and correlation techniques.
Findings: Early institutionalized Down's Syndrome subjects generally have a mean length of utterance which, even as adults, places them within Stage 1 or Stage 2 of Brown's developmental levels. They gain mastery of the eight basic semantic relationships and acquire some of the grammatical morphemes or modulations which emerge in Stage 2 in normal children. However, some of these modulations were not mastered by the subjects under study; although they did acquire the use of some more complex structures (relative pronouns, sentence embedding) which are beyond the linguistic knowledge of the normal child at Stages 2 and 3.
Duration: 1974-1976.

38-HG-2 EARLY EDUCATION PROJECT

Investigator(s): Gerard M. Kysela, Ph.D., Coordinator, Early Education Project, Centre for the Study of Mental Retardation, University of Alberta, Edmonton, Alberta, Canada.
Purpose: To develop a parent training program and a school based toddler and preschool classroom for infants with Down's Syndrome to facilitate their development in language, cognition, motor skills, and socialization; and to prepare them for entering more normal school settings.
Subjects: 50 children, ages 0 to 6 (approximately 60 percent male, 40 percent female), with Down's Syndrome as well as some other associated handicapping condition.
Methods: Data collection procedures include three techniques: (1) Collection of normative data on a 6- to 8-month basis before and during the family's involvement in the project. Instruments used include such tests as the Bayley Mental Development Index and the McCarthy Scales of Children's Abilities. (2) Collection of criterion referenced assessment information in language development, socialization, self-help skills, cognition, and motor development. (3) Collection of data regarding teachers' and parents' skills at implementing a teaching program in the five areas above.
Findings: The children involved in this project have been taught motor development, cognition, and language skills by their parents. In the school based program, the children have acquired skills in the above areas as well as numerous self-help skills.
Duration: November 1975-August 1977.
Cooperating group(s): Alberta Department of Education: Early Childhood Services and Planning and Research.
Publications: A paper presented to the Canadian Psychological Association, Toronto, Ontario, Canada, 1976: Kysela, G. M. *et al.* The Early Education Project I.

38-HH-1 TELECOMMUNICATIONS FOR HANDICAPPED CHILDREN AND YOUTH

Investigator(s): James W. Tawney, Ph.D., Associate Professor, Department of Special Education, University of Kentucky, 107 Porter Building, 730 South Limestone, Lexington, Kentucky 40506.
Purpose: To develop the technology to deliver instruction generated by computer over telephone transmitter systems to homes located in remote, sparsely populated, or geographically isolated areas of Kentucky.
Subjects: 18 children, ages 0 to 6, who are presumed to be severely developmentally retarded with attendant multiple handicapping conditions.
Methods: During the first phase of the project, a prototype electronic device was designed and built which enabled a minicomputer system (INTERACT) to drive simple learning devices at remote locales. During the second phase, simple devices (kick panels, arm pull devices, and match-to-sample apparatus) were built and placed in the homes of the 18 subjects. The expected outcomes are evidence that the system will work reliably. Evidence will also be presented on children's responding over time and more complex tasks. Further development, beyond this contract period, would focus on an infant learning curriculum, to be delivered by computer, and an integration of this system into current community based service delivery systems so that, at some point in the future, when notified of the birth of an infant with observable biological defect, the persons in charge of the telecommunications system can (1) install *teaching machines* in automated cribs; (2) begin training for parents to assist them to learn special care techniques for their impaired child; and (3) coordinate needed social, health, and other services to the family.
Duration: 1974-1976.

Cooperating group(s): Bureau of Education for Handicapped; U.S. Office of Education; Education Division; U.S. Department of Health, Education, and Welfare.
Publications: (1) Tawney, J. W. Educating severely handicapped children and their parents through telecommunications. In N. Haring *et al.* (Eds.), *Teaching severely and profoundly multihandicapped children.* New York: Grune and Stratton, 1976. (2) Tawney, J. W. Computer technology, the perennial great white hope for the handicapped. University of Oregon, Department of Special Education, Monographs for education of severely handicapped children, 1976.

38-HH-2 DEVELOPMENT OF A COMMUNICATION MODE FOR NONVERBAL NONPOINTING CHILDREN AT CENTRAL WISCONSIN COLONY AND TRAINING SCHOOL

Investigator(s): Gregg C. Vanderheiden, M.S., Director; and Gerald A. Raitzer, M.S., Project Director, Trace Research and Development Center for the Severely Communicatively Handicapped, University of Wisconsin, 922 ERB, 1500 Johnson Drive, Madison, Wisconsin 53706.
Purpose: To develop a simple, low cost, versatile communication aid which will provide mentally retarded, severely physically handicapped children with an effective means of indicating symbols, pictures, words, etc.
Subjects: Five mentally retarded children with poor pointing abilities.
Methods: A prototype communication aid will be placed in an institutional setting where it will be applied in both therapy and classroom environments. The aid will be used with several subjects to evaluate its physical and operational features, reaction of the children and teachers to using the aid, and its effects upon the children's educational, communication, and social development progress over a short term.
Duration: June 1976-January 1977.
Cooperating group(s): Central Wisconsin Colony and Training School, Madison, Wisconsin.

38-HH-3 A RESEARCH PROJECT FOR EXPANDING THE PRESENT VOCATIONAL EXPERIENCES CURRICULUM

Investigator(s): Ernest G. Thro, Ed.D., Director, Program Development, Hardin County Board of Education, 110 South Main Street, Elizabethtown, Kentucky 42701.
Purpose: To develop a model program of career education for educable mentally retarded high school students.
Subjects: 79 ninth graders (IQ range, 60 to 75).
Methods: Experimental and control groups representing the expanded vs. the present vocational curricula were prepost tested for personality and intellect with the California Test of Personality (AA and BB) and the Wide Range Achievement Test. Attitude change was measured by the structured interview instrument. End products included a printed curriculum guide for the integration of reading and math into current vocational programs; a technical simulation unit, in cooperation with community employers, which provides 15 videotapes of on-the-job training stations available at grade 11 and 12 levels; and other simulations that reflect local job opportunities; and a study of the use of simulation, guidance and counseling, and basic academic skills in conjunction with proven approaches to special vocational education.

Duration: July 1975-June 1976.
Cooperating group(s): Bureau of Occupational and Adult Education; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare.
Publications: A final report was submitted to the Office of Education, September 1976.

38-HH-4 PARENTS AND CHILDREN TOGETHER (PACT)

Investigator(s): Kay McDonald, M.S., Community Dynamics Specialist; William Gingold, Ph.D., Associate Director; Marie Bristol, M.A., Ex-Assistant Director, Children-Adolescent Services; and William F. Hoehle, II, Ph.D., Director, Infants' and Young Children's Department, Southeast Mental Health and Retardation Center, 700 - 1st Avenue South, Fargo, North Dakota 58102.
Purpose: To nourish, preserve, and rekindle achievement motivation in preschool children by having parents learn the process of normal child development; and to give parents the opportunity to share questions, answers, and concerns of the everyday task of parenting.
Subjects: From July 1, 1975 to June 30, 1976: Nine PACT groups representing 131 parents of 320 preschool children.
Methods: A parent initiator is recruited and then trained in group dynamics and group maintenance functions. The parent initiator then forms a group of 10 to 20 parents of preschool children. The group reads and discusses nine training packets relating to social-emotional development, behavior management, etc. A wide variety of alumni PACT programs are available after completion of the basic nine, if desired by the PACT group. Motivation for PACT functions is enhanced by the use of PACT Dollars, which is essentially a token economy with dollars exchangeable for educational toys.
Findings: In the PACT groups, parents showed an increase of 20.24 percent from pre- to posttests on learning packets, and the average attendance at PACT meetings was 77.4 percent. In addition, pre- and posttest developmental profiles of PACT parents' preschoolers showed an average increase of 21.6 percent above and beyond normal development based on chronological age. The prepost tests measure five broad developmental parameters: self-help, physical, social, academic, and communication.
Duration: 1973-continuing.
Cooperating group(s): (1) Bureau of Education for Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (2) Title XX.
Publications: Publication lists are available from Dr. Hoehle.

Emotionally Disturbed and Mentally Ill

38-JB-1 ROCHESTER EARLY CHILDHOOD STUDY

Investigator(s): Fredric H. Jones, Ph.D., Assistant Professor; and Arnold Sameroff, Ph.D., Professor, School of Medicine and Dentistry, University of Rochester, 300 Crittenden Boulevard, Rochester, New York 14642.
Purpose: To develop age appropriate measures of social competence for children, ages 2½ and 4; to norm these measures on male and female subjects; and to follow a sample

of children who are at high risk for schizophrenia using these measures as an extension of the Rochester Developmental Psychopathology Project.

Subjects: Normative Sample: 160 white, middle class boys and girls, ages 2½ and 4. High Risk Sample and Accompanying Controls: Boys and girls: 37 with schizophrenia and spectrum disorders; 36 neurotic depressives; 42 with personality disorders; 43 with situational reactions and other neuroses; and 153 with no mental illness.

Methods: A longitudinal design was used. Assessment of risk children was done neonatally, at 4 months, 1 year, 2½ years, and 4 years. Data on competence of the child were collected via an interview with the mother, psychological testing, mother-child interactions, and additional laboratory procedures.

Findings: Minor differences in functioning on IQ measures attributable to differences in severity of pathology of the mother wash out by 2½ years of age. Differences in social competence at ages 2½ and 4 are primarily attributable to socioeconomic status.

Duration: December 1974-December 1978.

Cooperating group(s): Grant Foundation.

Publications: Jones, Fredric H. The Rochester Adaptive Behavior Inventory: A parallel series of instruments for assessing social competence during early and middle childhood in adolescence. In J. Strauss, H. Babigian, and M. Roff (Eds.), *Methods of longitudinal research in psychopathology*. New York: Plenum (in press).

38-JC-1 THE RELATIONSHIP BETWEEN CHILDREN'S SOCIAL-EMOTIONAL FUNCTIONING, PERCEIVED PSYCHOSOCIAL CLIMATE, AND CROSS-SECTIONAL CONSISTENCY

Investigator(s): Martin Kohn, Ph.D., Director of Research; Abraham Jeger, M.A., Research Psychologist; and Martin Koretzky, Ph.D., Research Psychologist, Jewish Board of Guardians, 120 West 57th Street, New York, New York 10019.

Purpose: To determine how the two major dimensions of social environments (anabolic and catabolic) are related to the two major dimensions of social-emotional behavior (interest-participation vs. apathy-withdrawal; cooperation-compliance vs. anger-defiance); to test the independence of the three environmental dimensions underlying the Moos Social Climate Scales (relationship, treatment, program, and system maintenance); to ascertain relationships between children's behavior, academic achievement, and demographic variables; to determine relationships between children's and staff's perceptions of the social environment; and to determine whether children exhibit cross-sectional consistency in behavior.

Subjects: 270 children, ages 8 to 18, 80 percent male, who are enrolled in the Union Free School District at Hawthorne Cedar Knolls, a residential facility for emotionally disturbed and delinquent youth. The sample includes teachers (N = 52) at the school and all child care staff (N = 68) of the cottages.

Methods: All children were rated on the Schaefer-Aronson Behavior Inventory by teachers and child care staff to determine social-emotional functioning in the classroom and cottage. The Moos Community-Oriented Program Environment Scale was employed to assess the social climate in the cottages and the school. Children, cottage staff, and teachers completed this scale. Background information (demographics, academic achievement, intelligence, extent of psychopathology and physical health) is being collected from school records, the Psychological Clinic, and the infirmary.

Duration: September 1975-December 1976.

38-JC-2 DISTRACTION AS A FUNCTION OF WITHIN-TASK STIMULATION FOR HYPERACTIVE AND NORMAL CHILDREN

Investigator(s): Sydney S. Zentall, Ph.D., Assistant Professor, Department of Special Education, Eastern Kentucky University, Box 427, Richmond, Kentucky 40475; Thomas R. Zentall, Ph.D., Assistant Professor, University of Kentucky, Lexington, Kentucky 40506; and Robin S. Barack, M.Ed., Therapeutic Educator, Pittsburgh Child Guidance Center, 201 DeSoto Street, Pittsburgh, Pennsylvania 15213.
Purpose: To assess task performance of hyperactive and normal children with and without within-task color.
Subjects: 25 hyperactive children, ages 6.2 to 10.10, who were selected from two private day schools for children with learning and behavior problems; and 22 normal controls, ages 5.10 to 10.0, who were selected from regular elementary schools.
Methods: Using a repeated measures design, performance was measured on four tasks: two visual-motor drawing tasks, one visual concentration task, and a combined task for both the hyperactive and normal populations. Two performance measures of attention (time to complete task and errors) were recorded for the four tasks and subjected to a two-way repeated measures analysis of variance.
Findings: Error analyses indicated generally poorer performance by hyperactives than normals; and contrary to prediction, on two tasks hyperactives performed better without color than with color. Hyperactives tended to perform faster than normals on visual-motor tasks, but slower than normals on tasks requiring visual concentration.
Duration: 1975-1976.

38-JC-3 NEW CONCEPTS IN PRIMARY CARE DELIVERY FOR ADOLESCENTS

Investigator(s): Joseph L. Rauh, M.D., Department of Pediatrics, Adolescent Clinic, Children's Hospital Research Foundation, Elland and Bethesda Avenues, Cincinnati, Ohio 45229.
Purpose: To develop a new health care delivery system for adolescents; to utilize non-physician (psychologists, social workers, and nurses) primary care providers (PCP); to assess the usefulness and effectiveness of consultee-oriented psychiatric consultation for PCPs; and to assess the natural effect of adolescence as a developmental process.
Subjects: 196 adolescent patients in the original study, of which 83 remained for 12 weeks or more; and 263 patients in the replication study, of which 158 remained.
Methods: All patients applying to the Adolescent Clinic with psychological and/or behavioral problems were assigned in a random fashion to one of four experimental conditions and to one of three PCPs. The four conditions involved either immediate or delayed treatment (6 weeks after intake), and either presenting or not presenting the patient to a psychiatric consultant in a diagnostic case conference. All patients were initially assessed at intake with verbal sample and with the self-administered Adolescent Life Assessment Check List (ALAC). Additional assessments were done on all patients at 6 and 12 weeks from intake as well as 6 months and 1 year for the immediate treatment patients. The study was divided into two phases: an original study (fiscal years 1972 and 1973) and a replication study (1974 and 1975). The original design was not changed for the replication study; changes were made in procedures relating to data management. A procedure manual was written from experience with the original study and effectively utilized with the replication study. Data analysis is now in process on patients from the replication study. The major objectives of the project will then be assessed and discussed

with the results as a framework and comparisons made between the replication and original studies. Extensive demographic data about the patients and their families from the replication study will also be analyzed and related to outcome. In particular, the characteristics of the *never to intake* groups will be compared with both dropouts before therapy, during therapy, and with *finishers* to look for differences among them suggesting reasons for non- or poor compliance and ways to better identify, assist, and treat adolescents with emotional/behavioral problems.

Duration: July 1972-June 1976.

Cooperating group(s): Bureau of Community Health Services; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: Information is available from the investigator.

38-JD-1 THE RELATIONSHIP BETWEEN BIOLOGICAL AND PSYCHOLOGICAL FACTORS IN ENURESIS

Investigator(s): David Shaffer, M.B., MR.C.P., M.R.C.Psych., D.P.M., Senior Lecturer in Child and Adolescent Psychiatry; and N. Madge and F. Poncé, Research Workers, Institute of Psychiatry, 16 De Crespigny Park, Denmark Hill, London SE5 8AF, England.

Purpose: To delineate the relationships between what appear to be biological and what appear to be psychiatric factors in enuresis; more specifically, to assess the reliability and stability of a clinical measure of Functional Bladder Volume and to relate this to the psychiatric state and wetting behavior of a group of outpatient enuretics.

Subjects: Enuretic children who are outpatients at clinics of a local School Medical Service and in the Children's Ward of the Institute of Urology.

Methods: The validity of the Functional Bladder Volume Test is being examined with reference to cystometric measurement carried out in incontinent children admitted to the Shaftesbury Hospital (1) to study changes in functional bladder volume during treatment and to relate any such changes to changes in continence; (2) to contrast family social and symptom factors in enuretic children with and without a psychiatric disturbance; and (3) to contrast the psychiatric state of enuretic children with known anatomical abnormality of the bladder with enuretics who have no detectable abnormality.

Duration: April 1972-continuing.

Cooperating group(s): Maudsley-Bethlem Endowment Fund.

38-JE-1 DIURNAL TEMPERATURE AND CORTISOL VARIATION OF NORMAL AND AUTISTIC CHILDREN

Investigator(s): Suzanne D. Hill, Ph.D., Professor; Joseph G. Shedlarski, Jr., Ph.D., Associate Professor; and Emily Wagner, M.A., Student, Department of Psychology, University of New Orleans Lake Front, New Orleans, Louisiana 70122; and Suzanne P. Sears, M.D., Director, Children's Service, Southeast Louisiana Hospital, Mandeville, Louisiana 70448.

Purpose: To investigate the development of biological rhythms in autistic as compared to normal children.

Subjects: 10 children, ages 5 to 9: seven with autistic traits who were hospitalized at Southeast Louisiana Hospital, a residential psychiatric treatment center; and three normal children.

Methods: Blood was sampled by finger prick and collected in heparinized capillary tubes at 4-hour intervals starting at 1000 hours on day one, and continuing through 1000 hours the following day. Four to six capillary tubes were collected from each subject to allow at least two assays for reliability. After the blood was sampled, oral temperatures were taken using standard oral thermometers.

Findings: The children's pattern of variation was similar to normal adult pattern. Six of the seven experimental children showed abnormal variations in both temperature and cortisol levels.

Duration: August 1975-completed.

Cooperating group(s): Behavioral Science Industries, Ltd.

38-JF-1 PROSPECTIVE STUDY OF CHILDREN OF SCHIZOPHRENIC PARENTS

Investigator(s): L. Erlenmeyer-Kimling, Ph.D., Principal Research Scientist; and J. D. Rainer, M.D., Chief, Department of Medical Genetics, New York State Psychiatric Institute, 722 West 168th Street, New York, New York 10032.

Purpose: To analyze biological-environmental interactions, in order to develop screen methods for the early identification of vulnerable children; and to develop preventive intervention programs based on a more firm understanding of etiological factors and the premorbid state.

Subjects: 450 children, ages 7 to 12 at initial examination. Children (N = 200) were initially examined in 1971-73 and are being followed longitudinally; 200 children are being examined for the first time.

Methods: Interviews are conducted with parents and children in their homes. Teachers' evaluations are collected. Children's visits to the laboratory include a variety of psychological tests, a videotaped psychiatric interview, electrophysiology, neurological examination, and a battery of measures designed to assess attention, distractability, and stimulus tolerance. Biochemical measures are planned. At least two children in each family are studied.

Findings: Children of one or two schizophrenic parents perform more poorly than comparison subjects on psychological tests of perception, on motor coordination tasks, and on measures of attention and distractability. Developmental trends are noted.

Duration: February 1971-February 1980.

Cooperating group(s): (1) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare. (2) Scottish Rite Schizophrenia Research Program. (3) New York State Department of Mental Hygiene.

Publications: (1) Erlenmeyer-Kimling, L. Issues pertaining to prevention and intervention in genetic disorders affecting human behavior. In G. W. Albee and J. M. Joffee (Eds.), *Primary prevention in psychopathology*. Hanover, New Hampshire: University Press of New England (in press). (2) Rutschman, J. *et al. Report on a continuous performance test of sustained attention in children at risk for schizophrenia* (in press). (3) Erlenmeyer-Kimling, L. Attentional measures in a study of children at high risk for schizophrenia. *Second Pochester Conference on Schizophrenia* (in press). (4) Erlenmeyer-Kimling, L. Vulnerability research: A behavior genetics point of view. In *Proceedings of the 8th International Congress of the International Association for Child Psychiatry and Allied Professions* (in press). (6) A list of publications is available from the investigator.

38-JF-2 COMMUNICATION THERAPY IN CHILDHOOD SCHIZOPHRENIA

Investigator(s): Elaine Yudkovitz, Ph.D., Director; and Judy Rottersman, M.A.; and Nancy Lewison, M.A., Research Language and Speech Pathologists, Experimental Education in Language and Cognition, Henry Ittleson Center for Child Research, 5050 Iselin Avenue, Riverdale, New York 10471.

Purpose: To study the effect of a program of speech, language, and cognitive intervention (based upon auditory monitoring and feedback principles) on the communication behavior of a group of schizophrenic children and on two contrastive groups, one receiving creative dramatics therapy, and the other, motor learning therapy.

Subjects: 50 girls and boys, ages 7 to 14, diagnosed as schizophrenic. All the children are verbal at the level of discourse but have marked language and cognitive failures and have dull normal to bright normal IQs.

Methods: Twenty children in the research communication therapy program receive treatment three times a week according to an auditory monitoring and feedback model. In the contrast groups, 15 children receive motor learning therapy, and 15 children receive creative dramatics therapy. Prepost therapy assessment is based on a 44-parameter, 7-point scale of severity of speech, language, and cognitive behavior assessed by a blind rater for all children in all programs of treatment. Audio and videotaped samples are collected throughout. Assessments will also be made using motor learning and dramatic process scales (role playing, affective communication) for all children, in order to ascertain the effect of the programs. Group data will be analyzed for change. Individual clinical studies will be made.

Findings: At 1 year, for part of the group, clinical changes have been observed and recorded for the group receiving auditory monitoring and feedback (seven children to date). Five children showed notable improvement.

Duration: June 1974-June 1979.

Cooperating group(s): National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

Publications: Yudkovitz, E. *et al.* Communication therapy in childhood schizophrenia: An auditory monitoring approach. Monograph of Psychosocial Process, *Journal of the Jewish Board of Guardians,* 1975.

38-JG-1 THE ARTS AND MULTIFAMILY THERAPY

Investigator(s): Florence M. Douglas, M.D., Chief, Child/Adolescent Psychiatry, Department of Psychiatry, Charles R. Drew Postgraduate Medical School, Martin Luther King, Jr. Hospital, 12021 South Wilmington Avenue, Los Angeles, California 90059.

Purpose: To investigate the effect of modalities (such as art, music, psychodrama, role playing, and literature) on children and their families who are seen as a group in therapy.

Subjects: Six to 20 persons, ages 5 to 75, with a variety of presenting problems.

Methods: Subjects were seen for 16 weeks for a 3-hour period twice a week. Questionnaires were filled out by children and parents at tne beginning of the program and at the end of 16 weeks. Therapist assessment forms were completed at initiation and termination of the program and 6 months later. Data were also collected through videotape and notes of a participant observer via a two-way mirror.

Findings: The above modalities acted as catalytic agents in the group process, increasing abreaction and insight and appeared to affect behavior in that symptoms receded or disappeared.

Duration: February 1976-June 1976.
Cooperating group(s): (1) Fanon Research and Development Center. (2) Charles R. Drew Postgraduate Medical School, Learning Resources Center.

38-JG-2 TOWARD THE DEVELOPMENT OF A FAMILY THERAPY TRAINING PROGRAM FOR PRIMARY CARE PHYSICIANS

Investigator(s): Jack Santa-Barbara, Ph.D., Assistant Professor; N. B. Epstein, M.D., Professor; S. Levin, M.D., Professor; and D. Bishop, M.D., Associate Professor, Department of Psychiatry, McMaster University, Hamilton, Ontario, Canada.
Purpose: To determine the effectiveness of family therapy practiced by physicians as compared to traditional medical treatment for psychosocial problems; to analyze the cost effectiveness of this type of therapy; and to determine the effectiveness of a particular model of family therapy.
Subjects: 100 families under the treatment of family doctors for a variety of psychosocial problems (e.g., depression, alcohol problems, marital strife, problems with children).
Methods: The Family Therapy Group is compared to the Traditional Medical Group (i.e., medication and/or individual counseling). Other control groups are used to control for effects of monitoring treatment and training of physicians.
Duration: 1976-1978.
Cooperating group(s): McMaster University, Department of Family Medicine.

38-JH-1 TREATMENT EVALUATION BY WEIGHTED BEHAVIOR CHECKLISTS

Investigator(s): Elise E. Lessing, Ph.D., Senior Research Associate; and Chester C. Clarke; Yael Buchsbaum; Walter Wengel; Lisa Gil; and Geoffrey Hollimon, Research Workers, Institute for Juvenile Research, 1140 South Paulina, Chicago, Illinois 60612.
Purpose: To establish an ongoing evaluation of the course of psychopathology in groups of children, ages 6 to 18, who have experienced various treatment regimens; and to focus on the development of instruments to provide behavioral profiles of the child from several perspectives.
Subjects: 250 normal, untreated school children; and 240 emotionally disturbed children under treatment, ages 6 to 18. The disturbed children are under the care of agencies selected to represent a variety of treatment approaches.
Methods: All subjects are evaluated initially, after 6 months, after 15 months, and at the end of treatment regardless of the time at which termination occurs. Parent, teacher, and clinician checklists are completed on the disturbed children. Parent forms only are collected from parents of the normal sample. Patterns and rates of change will be compared as a function of the type of disorder manifested and the type of treatment provided. Data analysis has focused upon weighting the checklist items in terms of judgments of a nationwide sample of mental health professionals.
Duration: September 1974-December 1978.
Cooperating group(s): (1) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare. (2) Jewish Children's Bureau. (3) Illinois Department of Mental Health, Horner Children's Center and Madden Zone Center. (4) Jeannine Schultz School and Day School.

Publications: (1) Lessing, E. E. *et al.* Dimensions of adolescent psychopathology and their prognostic significance for treatment outcome. *Genetic Psychology Monographs,* 1976, 93, 155-168. (2) Lessing, E. E. *et al.* Differentiating children's symptom checklist items on the basis of judged severity of psychopathology. *Genetic Psychology Monographs,* 1973, 88, 329-350.

38-JH-2 CIBA RITALIN STUDY

Investigator(s): Dennis Whitehouse, M.D., M.R.C.P., Associate Professor and Director, Diagnostic and Evaluation Center, John F. Kennedy Institute, Johns Hopkins University, 707 North Broadway, Baltimore, Maryland 21205.
Purpose: To study the short- and long-term effects and safety of using Ritalin in the treatment of hyperactivity and attentional problems related to minimal brain dysfunction.
Subjects: 86 children, ages 6 to 12, with minimal brain dysfunction.
Methods: Two double blind studies, a short-term study of 4 months, and a long-term study of 3 years, were done to test the effects of Ritalin vs. placebo. Psychometric, chemical, and hematological evaluations of the subjects were made. Clinical data included height, weight, and blood pressure.
Findings: Eighty percent of the patients responded to Ritalin with an occasional dramatic placebo effect, but even more dramatically with suspension of six children from school on placebo. The long-term study so far has not demonstrated any significant effects on growth and certainly no other side effects other than those observed in terms of behavioral change.
Duration: January 1970-December 1976.

38-JI-1 A RESEARCH ANALYSIS: SOUTHEAST LOUISIANA HOSPITAL SCHOOL FOR EMOTIONALLY DISTURBED CHILDREN AND ADOLESCENTS

Investigator(s): Raymond L. Sibley, Ed.S., School Psychologist; and Barbara A. Kimbrell, M.Ed., Teacher, Southeast Louisiana Hospital School, P. O. Box 3850, Mandeville, Louisiana 70448.
Purpose: To describe statistically the psychoeducational program at the hospital, including such items as intelligence, levels of academic functioning, diagnoses, and attitudes.
Subjects: 479 boys and girls, ages 5 to 18, who were hospitalized during the calendar year August 1, 1974 to August 1, 1975. The pupil population profiled consisted of emotionally disturbed and socially maladjusted children whose impairments represented a full range of disorders: psychoses, neuroses, etc. In addition to the emotional disorders leading to their hospitalization and subsequent participation in the psychoeducational program, the children presented a significant number of accompanying educational problems: mental retardation, learning disabilities, academic retardation, etc.
Methods: The main sources of data collection were (1) individualized academic testing, employing the Wide Range Achievement Test and the Peabody Picture Vocabulary Test; (2) admissions records; and (3) on-site interviews. The study gives a descriptive analysis of the special school program, with emphasis on education rather than clinical aspects. Over 70 tables and histograms, together with direct interpretations and commentary, are included.
Findings: School activities appear to be successful. Preliminary information indicates positive results for the students involved. Among the most positive results were academic performance and pupil-teacher relationships.

Duration: 1974-1976.
Cooperating group(s): St. Tammany School System.
Publications: Data and results are available from the investigators.

Socially Deviant

38-KA-1 FOLLOW-UP STUDY OF STUDENTS RESTORED TO REGULAR SCHOOL FROM A REMEDIAL-DISCIPLINARY SCHOOL PROGRAM

Investigator(s): David Rosoff, M.A., Principal, Daniel Boone Remedial-Disciplinary Secondary School, Hancock and Wildey Streets, Philadelphia, Pennsylvania 19123.
Purpose: To evaluate the progress of students who are restored to regular school in an effort to reduce recidivism.
Subjects: 160 male, socially-emotionally maladjusted students, ages 9 to 17, who were assigned to Daniel Boone School because of serious disruptive behavior in regular schools.
Methods: After a 6- to 12-month period, the students were restored to regular school as a result of satisfactory adjustment in Daniel Boone's program. Forms were sent to schools receiving students. Each school was asked to describe the student's behavior in his new school setting. A rating scale of excellent, good, satisfactory, or poor adjustment was included in the evaluation. Information concerning the student's social and emotional adjustment was also requested. The study was based on a normative survey, in which counselors in the receiving schools assessed each student's behavior on a 4-point scale.
Findings: Of the 100 students in this survey, 73 failed to adjust and were reassigned to Daniel Boone School. In general, the study indicated a need for intervention by a staff person in the transition from one school to another. In addition, there was further indication that the restoration program needed additional supportive services to assist these students in making satisfactory adjustment in the normal school setting.
Duration: September 1975-continuing.
Cooperating group(s): Administrative and Survey Research Services, Department of Research Evaluation, School District of Philadelphia.
Publications: Information is available from the investigator.

Juvenile Delinquency

38-KC-1 THE HEALTH STATUS OF DELINQUENTS

Investigator(s): Harris Chaiklin, Ph.D., Professor, School of Social Work and Community Planning, University of Maryland, 525 West Redwood Street, Baltimore, Maryland 21201; and Franklin D. Chesley, M.S.W.; and William D. Litsinger, B.A., Maryland Department of Juvenile Services, 201 West Preston Street, Baltimore, Maryland 21201.
Purpose: To describe the health status of impact offenders on probation.
Subjects: 223 males, ages 14 to 18, who were impact crime offenders on probation (no drug addicts).
Methods: Health examination data of offenders on probation were compared with the literature which reports data on incarcerated delinquents.

100

Findings: Probationers, like those incarcerated, have poor health status; 62 percent of the youths had at least one treatable condition. Minor disabling conditions (e.g., related to teeth, vision, and hearing) were present in large numbers.
Duration: April 1974-September 1976.
Cooperating group(s): (1) Maryland Department of Probation. (2) Maryland Governor's Commission on Law Enforcement.

38-KC-2 JUVENILE DETENTION IN WISCONSIN, 1976

Investigator(s): Clifford O. McCoy, M.S.W., Project Director; Melonie McIntosh, M.S.W., Research Analyst; Timothy Toepel, B.S., Research Analyst; and Daniel Schroeder, B.S., Research Analyst, Wisconsin State Division of Family Services, 1 West Wilson Street, Madison, Wisconsin 53702.
Purpose: To review, assess, and evaluate detention facilities and procedures in Wisconsin, in order to develop recommendations for a state-wide plan for the detention of children, which will significantly improve services to children being detained and will clarify legal, administrative, and financial responsibilities of agencies that will be involved.
Subjects: Interviews were conducted with 32 juvenile court judges, 30 directors of social services departments, 26 county board chairmen, 73 caseworkers, 150 law enforcement personnel, 30 probation/parole agents, 7 detention and shelter home supervisors, and 38 detained youths.
Methods: Consistent with Project Steering Committee directives, 30 of Wisconsin's 72 counties were selected for in-depth study. State wide, a total of 360 interviews were conducted and 310 questionnaires were gathered. Questionnaires were developed for each type of respondent with questions drawn from a total of 160 questions. Questions centered on the procedures and policies of each aspect of the detention system. Project staff visited all 71 county jails and three juvenile detention centers to gather detention record data. Ten public hearings were held. After reviewing comments received at the public hearings and the general findings of project staff, the Project Steering Committee formally adopted recommendations for the improvement of juvenile detention in Wisconsin.
Findings: The county jail is the facility most frequently used to hold youths awaiting court action. Jailed youths are held in solitary confinement in most counties. Well over one-third of secure detentions are for status offenses. The rate of detention is three times greater for those apprehended for status offenses than those apprehended for criminal acts. Female youths are detained at higher rates than males following apprehension.
Duration: June 1974-May 1976.
Cooperating group(s): (1) Wisconsin State Division of Family Services and Division of Corrections. (2) Wisconsin Council on Criminal Justice.

38-KD-1 DEVIANT BEHAVIOR AMONG YOUTH IN A KIBBUTZ

Investigator(s): M. Amir, Ph.D., Senior Lecturer, Institute of Criminology, Law School, Hebrew University, Jerusalem, Israel.
Purpose: To describe and analyze the appearance of delinquent and deviant behavior in a kibbutz in Israel.
Subjects: All boys and girls, ages 14 to 17.

Methods: Data were gathered through participant observation and interviews with the youths, their counselors, parents, and anyone involved with them (e.g., teachers).
Duration: January 1974-January 1977.
Publications: A report is available in Hebrew and in English.

38-KF-1 TRUANTS COMING BEFORE JUVENILE COURT: A CONTROLLED TRIAL OF MANAGEMENT OF OUTCOME

Investigator(s): Ian Berg, M.D., Senior Clinical Lecturer, Department of Psychiatry; and Roy Hullin, Ph.D., Reader, Department of Biochemistry, University of Leeds, 7 Stone Rings Close, Harrogate, North Yorkshire, England.
Purpose: To determine which of two court procedures best ensures truants' return to school.
Subjects: 100 secondary school boys and girls sufficiently severely truant to be brought to court.
Methods: Subjects were randomly allocated to one of two treatment groups called "adjournment" and "supervision." Children assigned to the supervision group were supervised and seen regularly by a social worker. This is the standard practice in England when truants are brought to court. Children assigned to the adjournment group were repeatedly brought back to court. The frequency depended on the extent to which the child improved in school attendance. If there were little improvement, the child might be placed in a residential child care establishment for a period of 3 weeks, or might be handed over to the governmental social work agency which could then send the child away. An assessment was made of the children's subsequent school attendance over a 6-month period.
Findings: A retrospective study showed adjournment to be superior to supervision.
Duration: 1974-1977.
Publications: Berg, I. *et al.* Truancy and the courts. *Journal of Child Psychology and Psychiatry* (in press).

Corrections

38-KP-1 JUVENILE SERVICES PROJECT

Investigator(s): John A. Byles, D.S.W., Associate Professor; and Andrea Maurice, M.A., Research Associate, Department of Psychiatry, Medical Center, McMaster University, 1200 Main Street West, Hamilton, Ontario, Canada L8S 4J9.
Purpose: To evaluate a police family therapist team approach to help families with recidivating juvenile delinquents.
Subjects: 305 families of recidivating delinquents: 154 experimental families; 151 control families, randomly assigned. To be eligible, a family had to have one or more juveniles under age 14 with two or more offenses reported by police.
Methods: Experimental group families were offered J. P. S. service in their homes. Control group families received routine police investigation and disposition. All families were followed for a 2-year period. Outcome measures were indices of recidivism and court charges for target juveniles and siblings.

Findings: No significant differences were found between experimental and control groups on outcome measures.
Duration: April 1972-December 1976.
Cooperating group(s): (1) Hamilton-Wentworth Police, Youth Bureau. (2) Department of Health and Welfare, Canada, Welfare Grants Directorate.
Publications: A final report is available from: Department of Health and Welfare, Canada.

38-KR-1 EVALUATION OF GELLER HOUSE: AN INNOVATIVE PROGRAM DESIGNED AS AN ALTERNATIVE TO DETENTION

Investigator(s): Martin Kohn, Ph.D., Director of Research; and Martin Koretzky, Ph.D., Research Psychologist, Jewish Board of Guardians, 120 West 57th Street, New York, New York 10019.
Purpose: To determine the effectiveness of Geller House in channeling juvenile offenders to a setting which is less delinquency-producing.
Subjects: All boys and girls, ages 12 to 15, who were admitted to Geller House within a 1-year period.
Methods: Geller House is a temporary shelter for juveniles who come to court in times of family crises. Various methods were pilot tested to assess the personality difficulties and developmental handicaps of the youths at intake. These included prior legal involvement, age at onset of various school problems (truancy, management, and academic), drug involvement, family background, a full battery of psychological and achievement tests, and personality rating scales to assess children's social-emotional functioning in terms of two major dimensions (apathy-withdrawal and anger-defiance). Follow-up procedures were developed to determine the effectiveness of the Geller House recommendations and the extent to which the youths get into further legal difficulties. Follow-up procedures included an extensive list of further legal involvement variables including number of further court hearings, number of warrants, amount and kind of detention, time lapse between recommendation and court actions, and the eventual disposition of the case by the court (probation, placement, etc.).
Findings: The Family Court does not follow the Geller House recommendations in many cases. Later serious delinquency is predicted by earlier serious delinquency, not by the escalation of early minor offenses.
Duration: September 1975-December 1976.
Cooperating group(s): New York Family Court.
Publications: (1) A paper presented at the First National Conference on Issues in Juvenile Justice and Child Development, November 14-17, 1976, Cherry Hill, New Jersey: Kohn, M. and Koretzky, M. The fate of status and serious offenders in the juvenile court. (2) Kohn, M. and Koretzky, M. An evaluation of Geller House as an alternative to detention: A pilot study. Mimeo, Jewish Board of Guardians, March 1976.

38-KR-2 CONSISTENCY, RISK, AND ADJUSTMENT AMONG PROBLEM ADOLESCENTS

Investigator(s): Martin Koretzky, Ph.D., Research Psychologist; and Martin Kohn, Ph.D., Director of Research, Jewish Board of Guardians, 120 West 57th Street, New York, New York 10019.

Purpose: To examine the degree to which cross-situational consistency can be demonstrated when the Two Factor Model of Social-Emotional Functioning is used as a methodological base; and to examine the relationship between background risk and later adjustment.

Subjects: 110 adolescent boys and girls, ages 12 to 15, who were admitted to Geller House (a short-term residential diagnostic center) over a 6-month period.

Methods: Adjustment to Geller House was conceptualized in terms of social-emotional functioning (Kohn, 1973). This model states that much behavior variance can be accounted for in terms of two bipolar dimensions: interest-participation vs. apathy-withdrawal, and cooperation-compliance vs. anger-defiance. Instruments used to assess the level of functioning on these two dimensions include the Schaefer Behavior Inventory, the Kohn Test-Taking Behavior Rating Scale, and a problem checklist based on the work of Peterson. Consistency of personality functioning was assessed across two settings within Geller House: the school and the residence. Further analysis included effects on the *consistency hypothesis* of dividing subjects into low vs. high variability groups. Background risk was defined in terms of prior school and legal involvement and achievement. Risk data were gathered by various staff members of the Geller House and the Jewish Board of Guardians, including teachers, clinical psychologists, and members of the research department.

Findings: Findings indicate (1) a strong cross-situational consistency on cooperation-compliance vs. anger-defiance and moderate consistency on interest-participation vs. apathy-withdrawal, and (2) a predictive relationship between a prior overall risk index and the dimension of cooperation-compliance vs. anger-defiance at Geller House.

Duration: September 1975-August 1976.

Cooperating group(s): (1) State University of New York, Stony Brook. (2) New York Family Court.

Publications: (1) Koretzky, M. An examination of human consistency and background-risk through the Two Factor Model of Social-Emotional Functioning. Doctoral dissertation, State University of New York, Stony Brook, August 1976. (2) Koretzky, M. and Kohn, M. Cross-situational consistency among problem adolescents: An application of the two factor model (in preparation).

38-KR-3 AN EVALUATION STUDY OF UNIT E: AN EXPERIMENTAL PROGRAM

Investigator(s): Steven J. Beck, M.A., Research Psychologist, Hamilton County Juvenile Detention Center, 2020 Auburn Avenue, Cincinnati, Ohio 45219.

Purpose: To assess changes in behavior, attitudes, and self-perceptions of juvenile delinquents as a result of their participation in a newly developed treatment program.

Subjects: 40 males and 20 females (mean age, 15.5), who were adjudicated delinquent or unruly by the courts and consequently placed into the treatment program or other facilities located within Hamilton County, Ohio. Thirty of the subjects were experimental; 30, control.

Methods: All adolescents, prior to placement in either the experimental or control group, were tested using three instruments: the Jesness Inventory, the Tennessee Self-Concept Scale, and the Rotter Interpersonal Trust Scale. The treatment (experimental) program is a coeducational, behavior modification setting that works within a privilege, or level, system. Each level (of which there are six) encompasses corresponding behaviors, responsibilities, and privileges. Adolescents are placed in the treatment program to a maximum of 90 days. Other Hamilton County juvenile treatment facilities were used as control set-

tings. The experimental group was retested by the same instruments at the time of graduation. The control group was retested at this time, regardless of whether they had graduated from their respective programs. The experimental and control groups were matched for sex, race, IQ, parental involvement, and degree of offense. It is expected that adolescents in the experimental program will improve their self-perceptions on a variety of themes (e.g., family self, social self, and moral-ethical self) as a result of their participation in the program. Other personality characteristics, such as aggression, alienation, and immaturity are expected to improve. In addition, degree of trust for others is expected to show an increase after graduating from the treatment program. No predictions are being made between the experimental and control groups. However, any changes observed in the experimental setting will be evaluated more clearly after similar changes do or do not occur with the control settings.

Duration: April 1976-July 1977.

THE CHILD IN THE FAMILY

Family Relations

38-LA-1 PARENTAL POWER AND CHILD COMPLIANCE

Investigator(s): Darwin L. Thomas, Ph.D., Director, Family Research Center; and Boyd C. Rollins, Ph.D., Professor of Child Development, Brigham Young University, Provo, Utah 84602.
Purpose: To determine combinations of parental behaviors that best predict child compliance to culturally prescribed behaviors.
Subjects: 183 families, each with two parents and two teen-age children, half same sex and half opposite sex siblings.
Methods: Self-report data were obtained from all four family members. Observational data were obtained during structured family problem solving tasks. A multitrait-multimethod matrix was used to assess validity of measurement. Multiple regression, path analysis, and analysis of variance were used in data analysis.
Findings: In terms of religiosity and academic achievement, children seem to imitate parental models more than respond to parental behaviors. In hypothetical life goal decisions, families favor boys over girls 4 to 1.
Duration: September 1974-December 1976.
Cooperating group(s): National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

38-LA-2 A LIFE SPAN ANALYSIS OF MENTAL AND SOCIAL DEVELOPMENT IN RURAL CHILDREN: OBSERVATIONAL COMPONENT

Investigator(s): R. Peter Johnson, Ph.D., Assistant Professor; Q. B. Mills, Ed.D., Professor and Head; and B. Jean Peterson, Ph.D., Assistant Professor, Division of Child Development and Family Relationships, University of Illinois, Child Development Building, 1105 West Nevada, Urbana, Illinois 61801; and Margaret M. Thompson, Ph.D., Professor, School of Applied Life Sciences, University of Illinois, Urbana, Illinois 61801.
Purpose: To study family-interactional correlates of cognitive and social development in rural children.
Subjects: 10 farm families remaining in the study at the end of 3 years, each having a 3-year-old child in year one of the data collection.
Methods: Up to 16 hours of videotape and other observations collected in the summer (10 hours) and winter (6 hours) will be correlated with data obtained from tests and questionnaires dealing with home-setting descriptions, parent attitudes toward childrearing, child socialization, and Piagetian cognitive abilities. The data will be collected over a 3-year period and compared with survey data collected in five other midwestern states.
Findings: Pilot studies are being used to refine the research methodology. The first summer's data are being collected from 21 farm families each having a 3-year-old child.

Duration: July 1974-June 1979.
Cooperating group(s): Child development departments or equivalent units associated with Agriculture Experiment Stations at Iowa State University, Kansas State University, the University of Nebraska, Purdue University, and the University of Wisconsin.

38-LA-3 THE UNWANTED CHILD SYNDROME: A DEVELOPMENTAL ETIOLOGY

Investigator(s): Joy Goforth, M.A., Psychology Student, Department of Psychology, Pepperdine University, 8035 Vermont Avenue, Los Angeles, California 90044.
Purpose: To test the hypothesis that a biological form of maternal deprivation exists (but may be reversible later) and has developmental and physiological effects upon an infant before s/he is 4 to 6 months old; and to focus on electrical/bioenergy stimulation (production of bioenergy within the infant and/or transfer via radiation from mother to child) of physiologically developing, critical-period functions.
Subjects: Mothers within favorable childbearing ages (age and socioeconomic variables held relatively constant); and infants younger than 4 to 6 months. Mothers are selected because of their responses to interview-questionnaires collected in large maternity wards.
Methods: A scale of relative differences used in scoring the interview-questionnaires will be used to polarize into two groups the mothers selected at random from large maternity wards: an experimental group of mothers (with their babies) considered to be rejecting; and a control group of mothers (with their babies) considered to be warm and loving mothers, most accepting of their offspring. Mothers will be contacted later for testing. Electrical equipment (EEG or other, and possibly Kirlian photography) will be used to measure differences in infant energy generation/transfer during emotionally-expressive contact.
Findings: Extensive research into the literature suggests that (1) most relevant clinical and experimental data allow for the possibility that this hypothesis is true, and (2) there appears to be no data or evidence that contradict this possibility.
Duration: 1971-1978.
Cooperating group(s): University of California, Los Angeles, Neuro-Psychiatric Institute Laboratory.

38-LA-4 FAMILY MEDIATIONS (UNEXPECTED REWARD METHOD)

Investigator(s): Dorothy Tennov, Ph.D., Professor, Department of Psychology, University of Bridgeport, Bridgeport, Connecticut 06602.
Purpose: To redirect parental attention toward children's desirable behavior; and to initiate positive cycles of social interaction among family members.
Subjects: 85 volunteer families.
Methods: Data consist of student reports of their work with 85 volunteer families. Descriptive statistics and correlations (e.g., success is positively correlated with family size, no relationship between age of child and success) are being computed.
Findings: The unexpected reward method is successful in redirecting paternal attention to children's desirable behavior. The mediation method is feasible using semiprofessionals and indigenous perons.
Duration: 1973-continuing.
Publications: A handbook is available from the University of Bridgeport.

38-LC-1 BIRTH PLANNING: VALUES AND DECISIONS

Investigator(s): Brenda D. Townes, Ph.D., Associate Professor, Department of Psychiatry and Behavioral Sciences; Lee Roy Beach, Ph.D., Professor, Department of Psychology; and Frederick L. Campbell, Ph.D., Associate Professor, Department of Sociology, University of Washington, RP-10, Seattle, Washington 98195.

Purpose: To investigate the application of subjective expected utility theory to the study of values associated with birth planning decisions.

Subjects: 199 married couples including 51 couples with no children, 50 with one child, 51 with two children, and 47 with three or four children. Criteria for inclusion in the study were: present use of a contraceptive, Caucasian, no history of infertility or adoption, no previous sterilization, and a reasonable likelihood of continued residence in the Seattle metropolitan area for at least 2 years. Subjects were recruited from educational and religious institutions, and they were primarily highly educated and middle class.

Methods: A hierarchy of birth planning values was developed and administered to subjects three times with retest intervals of 1 year. Multivariate analysis of variance procedures were used to study changes in values associated with birth planning decisions as a function of parity.

Findings: See Publications below

Duration: April 1974-August 1977.

Cooperating group(s): Center for Population Research; National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare.

Publications: (1) Townes, B. D. *et al.* Birth planning values and decisions: Preliminary findings. Monograph. National Institute of Child Health and Human Development (in press). (2) Townes, B. D. *et al.* Birth planning values and decisions: The prediction of fertility. *Journal of Applied Social Psychology* (in press). (3) Beach, L. R. *et al.* The measurement of values associated with birth planning decisions. *Organizational Behavior and Human Performance,* 1976, 15, 1976. (4) Campbell, F. L. *et al.* Counseling for childbearing: Toward a calculus of conscious choice. (A paper is available from the investigators.)

38-LC-2 CHILDREN OF PARENTS WHO SEPARATE

Investigator(s): Marie M. Clay, Ph.D., Professor, Department of Education, University of Auckland, Private Bag, Auckland 1, New Zealand.

Purpose: To explore the relevant variables for further research on what assists children to cope with parental separation.

Subjects: 69 custody parents separated for 1 to 6 years; and their children, ages 4 to 12.

Methods: A survey in 90 percent of the metropolitan schools resulted in a list of all children not living with two natural parents. An ANOVA of teacher ratings of adjustment and attainment was computed. Interviews were conducted with custody parents on the history of the child's behaviors before, during, and following separation. The children's views were assessed using the Bene-Anthony Family Relations Test.

Findings: Future studies must control for factors affecting sample selection, age of child at separation, time since separation, parent activity in home prior to separation, age of child at interview of testing, sex of child, sex of custody parent, and many other things to discipline the diversity. An apparent immaturity in the adjustment of children should be

viewed positively by teachers and social workers. It could be an indication of a more complex adjustment being struggled with which could be a future strength.
Duration: 1973-1976.
Cooperating group(s): University of Auckland, Nuffield Foundation.
Publications: Information is available from the investigator.

38-LC-3 RESEARCH ON THE CONSEQUENCES OF CHILDBEARING AND CHILDSPACING PATTERNS FOR PARENTS

Investigator(s): Margaret Mooney Marini, Ph.D, Research Scientist, Battelle Human Affairs Research Centers, 4000 N. E. 41st Street, P.O. Box 5395, Seattle, Washington 98105.
Purpose: To determine the effects of age at first marriage, age at first birth, and number and timing of subsequent births in relation to the following outcomes: (1) parental satisfaction; (2) marital satisfaction, marital dissolution, and remarriage; (3) characteristics describing the marital relationship; (4) the occupational behavior of each marriage partner; (5) geographic mobility; (6) family income; (7) religious, community, and leisure activities; and (8) personal esteem; to examine the effects of childbearing and childspacing on these outcomes for both women and men; and to compare the two sexes.
Subjects: Approximately 6,500 young adult women and men, who were studied as students in 10 Illinois high schools from 1957 to 1958, and who were followed up in 1973.
Methods: Data were collected via questionnaire from individuals and their parents during the high school years. The same individuals were surveyed 15 years later by means of questionnaire or telephone interview.
Duration: June 1975-February 1978.
Cooperating group(s): Center for Population Research; National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare.

38-LF-1 EFFECT OF PARENTAL ALCOHOLISM ON CHILDREN

Investigator(s): Philip Jensen, M.D., Assistant Professor of Pediatrics; Willem Bosma, M.D., Associate Professor of Psychiatry; and Marvin Kamback, Ph.D., Associate Professor of Psychology in Psychiatry, Medical School, University of Maryland, 721 West Redwood Street, Baltimore, Maryland 21201.
Purpose: To evaluate the physical and psychosocial problems of children of alcoholics.
Subjects: 60 families with an alcoholic parent; and children, ages 5 to 18.
Methods: Families are interviewed, submit to physical examinations, and fill out a computable, 40-page questionnaire. Selected families are followed for a year or more, receive family therapy and close observation, and are compared to control families.
Findings: A few physical findings are significantly higher among these children. They have extensive psychosocial problems, which are much higher than in the average population.
Duration: 1974-1980.
Cooperating group(s): National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

38-LF-2 MOTHER-INFANT ATTACHMENT AND INFANT PSYCHOPATHOLOGY

Investigator(s): Henry N. Massie, M.D., Coordinator; and Kay Campbell, M.A., Research Associate, Mental Health Services for Children, Department of Pediatrics, San Francisco General Hospital, 1001 Potrero Avenue, San Francisco, California 94110.
Purpose: To assess the usefulness of reciprocal mother-infant attachment behaviors for identifying children-at-risk to develop psychopathology and for identifying mothers-at-risk for impaired parenting; to study the implications of different patterns of mother-infant attachment for subsequent development; and to consider psychotherapeutic strategies for modifying dissynchronous or failed attachment between a mother and infant.
Subjects: Neonates followed to age 3. The sample includes 20 mother-child dyads that are deviant for attachment, and 20 pairs whose reciprocal attachment is unremarkable.
Methods: The principal components of mother-infant attachment (eye gaze, vocalization, touching, holding, affect) will be observed from the neonatorium until the child is 3 years old. To do this, a scale rates the interactional process of the mother's attachment to the infant and the infant to the mother, when the infant is under the stress of the doctor's physical examination in the pediatric clinic. The scale indicates failures in attachment or dissynchronies in the mother-infant relationship in the first 1½ years. The children will be followed to age 3, when the earliest attachment behaviors and maternal management of infant stress will be correlated with psychological development attained by 3 years. In addition, periodic videotapes of the physical examination stress situation will be analyzed by blind raters. Psychological profiles will also be obtained for the mothers.
Duration: 1975-1980.
Cooperating group(s): (1) University of California, San Francisco, School of Medicine. (2) East Bay Activity Center, Oakland, California. (3) Mt. Zion Hospital, San Francisco, California.
Publications: Massie, H. N. The early natural history of childhood psychosis. *Journal of the American Academy of Child Psychiatry,* 1975, 14(4).

38-LG-1 DEVELOPMENT OF PARENTAL ATTACHMENT

Investigator(s): Susan Goldberg, Ph.D., Assistant Professor, Department of Psychology, Brandeis University, South Street, Waltham, Massachusetts 02154.
Purpose: To assess the impact of neonatal problems and resulting differences in infant behavior upon the development of parent-child interaction.
Subjects: Five males and five females in four groups: normal full-term, healthy premature, sick premature, and infants of diabetic mothers.
Methods: Families were followed longitudinally from baby's birth to age 1. Home, hospital, or lab visits were made at 4, 8, and 12 months. At each of the ages, infant behavior and parent-child interaction were assessed. Measures used at each age included: for newborns: Brazelton Neonatal Assessment Scale; at 4 months: Bayley Scales of Infant Development, feeding observation and a parent-kept diary; at 8 and 12 months: Bayley Scales of Infant Development and free play observations.
Findings: Preliminary analyses indicate that newborn behavior at time of hospital discharge differs between groups. The sicker the infant has been, the poorer the scores on alertness, response to stimulation, and motor coordination. At the first two feedings, the sicker the baby, the less s/he is cuddled and talked to.
Duration: January 1975-August 1977.
Cooperating group(s): (1) Office of Child Development; Office of Human Development; U. S. Department of Health, Education, and Welfare. (2) Boston Hospital for Women.

38-LG-2 COPING IN FAMILIES WITH A LEUKEMIC CHILD

Investigator(s): Jerome L. Schulman, M.D., Head; and Mary Jo Kupst, Ph.D., Research Psychologist, Division of Child Psychiatry, Children's Memorial Hospital, 2300 Children's Plaza, Chicago, Illinois 60614.
Purpose: To study coping patterns in families in which a child is diagnosed as having leukemia; to determine the relationship of coping behavior and variables that are hypothesized to affect coping; and to assess the effectiveness of an intervention strategy to help families maximize their coping resources.
Subjects: Over a 5-year period, 50 families per year in which a child is diagnosed as having leukemia; and 50 families per year in which no leukemia is diagnosed.
Methods: Over the 5-year period, 160 families will be followed to study their coping behavior, both in terms of individual and family functioning. Families will be randomly assigned to one of three groups: total intervention, moderate intervention, or no intervention. The intervention consists of a series of clinical interviews with a mental health professional at critical times during the course of the illness: at the time of diagnosis, at subsequent outpatient visits, during inpatient hospitalization, at discharge, and at postdemise follow-up. In addition, a control group of 160 families, whose children do not have leukemia, will be assessed in the same way. The intervention will focus on specific adaptive tasks throughout the coping process. Multiple measures of coping will be obtained. Through clinical interviews, systematic observational methods, and psychological assessment; relationships among coping, degree of prior functioning, demographic and background data, and interactional data will be studied.
Duration: June 1976-June 1981.
Cooperating group(s): (1) National Cancer Institute; National Institutes of Health; Public Health Service; U. S. Department of Health, Education, and Welfare. (2) Children's Memorial Hospital, Leukemic Service.

38-LG-3 EARLY SEPARATION AND SPECIAL CARE IN NEONATAL NURSERIES

Investigator(s): M. P. M. Richards, Ph.D., Lecturer, Medical Psychology Unit, University of Cambridge, 5 Salisbur, Villas, Station Road, Cambridge CB1 2JQ, England.
Purpose: To evaluate the extent of separation, its possible effects, and ways of reducing separation; and to examine pediatric policies for special care nurseries.
Subjects: All babies born in England and Wales in 1974; their mothers; and 200 consecutive admissions to a special care baby unit excluding babies who died and those who stayed for less than 48 hours.
Methods: Data collected included (1) records of all visits to babies and activities undertaken by visitors, (2) mothers' and babies' hospital medical records, (3) records of all telephone calls to the unit concerning the baby, and (4) an interview with the mother at or soon after discharge of the baby. The interview covered sociological information about the family, methods of travel to the unit, attitudes toward visiting, and treatment in the unit. Analysis of pediatric policies for special care units was based on Department of Health statistics, which generally related to maternity care. The regional variations in admissions were compared with features of the local obstetric population.
Findings: Results of the study of visiting showed that, even when visiting was encouraged, a significant minority of babies remained unvisited while they were in the special care unit. A major reason for not visiting was that mothers were often confined in different hospitals from their babies. A series of factors was identified which correlated with frequency of visiting from which was derived a number of policy recommendations. The

analysis of pediatric policies showed (1) regional variation in admissions was related to the provision of facilities and not to measures of medical need; (2) many admissions were unnecessary; i.e., were for observation rather than treatment; and (3) in almost all regions, there was an overprovision of special care nursery facilities (estimated from measures of need).

Duration: October 1970-October 1976.

Cooperating group(s): Department of Health and Social Security.

Publications: Early separation and special care nurseries. In F. S. W. Brimblecombe and M. P. M. Richards (Eds.), *Clinics in developmental medicine.* London: SIMP/Heineman Medical Books (in press).

Childrearing

38-MA-1 LEVEL OF MORAL JUDGMENT AS A FUNCTION OF INDUCTIVE DISCIPLINE

Investigator(s): John R. Nevius, Jr., Ph.D., Associate Professor, College of Education, Texas Tech University, Lubbock, Texas 79409.

Purpose: To explicate further the issue of parental patterns of discipline and stages of moral development.

Subjects: 40 boys, age 10, and their mothers from metropolitan Los Angeles, equally divided between the lower and middle classes. Mean IQ of lower SES subjects, 102.6; middle SES subjects, 107.2.

Methods: The investigator administered Kohlberg's moral dilemma problems to the subjects. Subsequent blind scoring by Kohlberg's global method was carried out by the investigator and two assistants, assigning subject's stage scores from I to III. Data on parenting style were obtained from both the subjects and their mothers by using Hoffman's questionnaire to assess power assertion, love withdrawal, and induction. Scoring the parenting questionnaires was a straight summation of scores as directed by Hoffman.

Findings: The data associated lower SES with stage I and power assertion, and middle SES with stage II and nonpower assertive techniques of childrearing. However, analysis of the between means data showed significant differences ($ps < .02$) for: middle SES sons, stage III and induction; and middle SES mothers, and stage II and love withdrawal. The overall evaluations of the middle SES data upheld nonpower assertive discipline. However, in this study, the relationship of such discipline to higher stages of moral judgment (II or III) was not established. While middle class sons' moral judgment was found predominantly at stage III and their perception of childrearing to be inductive, the relationship between the two may only be implied.

Duration: September 1975-completed.

Cooperating group(s): University of California-Los Angeles, University Elementary School.

Publications: *Journal of Social Psychology,* Fall 1977.

SOCIOECONOMIC AND CULTURAL FACTORS

38-NA-1 THE KPELLE EARLY LEARNING ENVIRONMENT

Investigator(s): Gerald M. Erchak, Ph.D., Assistant Professor; Beatrice Whiting; and Michael Cole, Department of Sociology, Skidmore College, Saratoga Springs, New York 12866.
Purpose: To investigate factors in early childhood possibly affecting later intellectual performance among Liberian tribal children.
Subjects: 24 Liberian Kpelle children: 12 boys and 12 girls, ages 1 to 6.
Methods: Twelve 15-minute behavioral observations of each child were collected over a year.
Findings: The Kpelle early learning environment is perfectly adapted to the ecological/economic imperatives of Kpelle life and poorly suited to the Western school. Sex differences and developmental trends are economically based.
Duration: July 1970-August 1978.
Cooperating group(s): Fulbright Foundation.
Publications: The Kpelle Early Learning Environment. Ann Arbor: University of Michigan Microfilms.

38-NB-1 REGIONAL DIFFERENCES IN CHILDREN'S DEVELOPMENT

Investigator(s): Hilary Robinson, B.Sc., M.A., Research Officer, National Children's Bureau, 8 Wakley Street, London EC1, England.
Purpose: To examine the relationship between children's development and the background socioeconomic conditions of different regions of the country.
Subjects: 1,600 children, age 11, in the National Child Development Study from 12 regions and 174 local education authorities in England, Wales, and Scotland.
Methods: Methods were concerned with the children's educational attainment. National Child Development Study measures of math and reading scores were compared. Specific social and economic conditions were those reflected in data on the provision of educational services. These data were collected from every local education authority and include data on salaries, expenditures, pupil-teacher ratios, etc. A joint analysis examined child based and area based data in relation to educational outcomes. Statistical methods included analysis of variance and regression.
Duration: July 1974-November 1976.
Cooperating group(s): Center for Environmental Studies, London, England.

38-NC-1 POLITICAL ATTITUDES, KNOWLEDGE OF GOVERNMENT AND EDUCATION IN TEN COUNTRIES

Investigator(s): Judith V. Torney, Ph.D., Associate Professor, Department of Psychology, University of Illinois, Chicago, Illinois 60680.
Purpose: To determine major sources of influence on attitudes and knowledge.

Subjects: 30,000 students, ages 10, 14, and 17 to 19; and their teachers from Finland, the Federal Republic of Germany, Ireland, Israel, Italy, the Netherlands, New Zealand, Sweden, and the United States.
Methods: This is one of a series of studies of achievement conducted by an international comparative education organization. Hour-long measures of knowledge and attitudes concerning political systems were collected in 1971. Data include democratic values and political efficacy. Within-country regression analyses were conducted to determine the impact of home background and school.
Findings: There are between-country differences in attitudes and cognitive achievement.
Duration: 1967-1976.
Cooperating group(s): International Association for the Evaluation of Educational Achievement, Stockholm.
Publications: Torney, J. V.; Oppenheim, A. N.; and Farnen, R. F. *Civic education in ten countries: An empirical study.* New York: John Wiley and Sons, Inc.; and Stockholm, Sweden: Almquist and Wiksell, 1975.

38-NG-1 ALASKAN ESKIMO CHILDREN'S GAMES AND THEIR RELATIONSHIP TO CULTURAL VALUES AND ROLE STRUCTURE IN A NELSON ISLAND COMMUNITY

Investigator(s): Lynn Price Ager, Ph.D., Department of Anthropology, Ohio State University, Columbus, Ohio 43201.
Purpose: To study games as expressive behavior and to determine specifically what is reflected in children's game playing.
Subjects: Eskimo girls and boys, ages 3 to 18.
Methods: Participant-observation was carried out during 8 months of field work in an Eskimo village. General ethnographic research accompanied specific study of games. Records were kept in the form of daily field notes.
Findings: In Aboriginal Eskimo culture, games tended to reflect both cultural values and societal role organization. As acculturation affected Eskimo society, role structure changed significantly but cultural values remained more conservative. Today, games continue to reflect focal values but have not changed to reflect new role organization.
Duration: July 1973-completed.
Cooperating group(s): (1) National Institute of Education; Education Division; U. S. Department of Health, Education, and Welfare. (2) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.
Publications: (1) Alaskan Eskimo children's games and their relationship to cultural values and role structure in a Nelson Island community. Report No. 61. Columbus, Ohio: Ohio State University, Institute of Polar Studies (in press). (2) The reflection of cultural values in Eskimo children's games. In D. Lancy and B. A. Tendall (Eds.), *The anthropological study of play: Problems and prospects.* Cornwall, New York: Leisure Press, 1976. Pp. 79-86. (3) Play as folklore: An Alaskan Eskimo example. *Newsletter of the Association for the Anthropological Study of Play,* Fall 1975, 2(3), 16-18. (4) A paper presented to the Association for the Anthropological Study of Play, Detroit, April 1975: The reflection of cultural values in Eskimo children's games.

38-NG-2 ETHNIC GROUP AND SOCIAL CLASS DIFFERENCES IN THE USES AND FUNCTIONS OF LANGUAGE: AN INVESTIGATION IN THE ETHNOGRAPHY OF COMMUNICATION AS RELATED TO EARLY SCHOOL BEHAVIOR

Investigator(s): William S. Hall, Ph.D., Associate Professor, Laboratory of Comparative Human Cognition, Rockefeller University, 1230 York Avenue, New York, New York 10021.

Purpose: To determine the intellectual consequences of differences in language structure, content, and function as these interact with social class, ethnic group memberships, and setting.

Subjects: 20 black and 20 white children, ages 4-1/2 to 5. Half of each race was from the middle class; half was from low income backgrounds.

Methods: Seven hours of naturally occurring conversations between each target child and those he encountered during this period were tape recorded. Children were recorded in 10 settings: (1) before leaving school, (2) on the way to school, (3) transition to the classroom, (4) snacks/toileting, (5) free play, (6) teacher directed activity, (7) on the way home from school, (8) prior to dinner, (9) dinner, and (10) prior to bedtime. Conversations were transcribed and analyzed in terms of subcultural differences in propositional content, conversational-act type, staging, linguistic field, and cohesion.

Duration: July 1974-June 1977.

Cooperating group(s): Carnegie Corporation, New York.

38-NG-3 A CROSS-CULTURAL INVESTIGATION OF INFANT TEMPERAMENT CHARACTERISTICS AND THEIR REARING MILIEU AND DEVELOPMENTAL SEQUELAE

Investigator(s): Marten de Vries, M.D., Resident in Psychiatry and Pediatrics, Department of Psychiatry, Strong Memorial Hospital, University of Rochester, 260 Crittenden Boulevard, Rochester, New York 14619.

Purpose: To determine whether differences in infant temperament exist across cultures; and to determine the effects of troublesome infant behavior in different settings through a brief longitudinal study of the first 8 months using both prospective and retrospective samples.

Subjects: 178 infants, ages 5 to 8 months, from three East African tribal groups (Maasai, Kikuyu, Digo) studied in hospital, urban, and traditional African settings.

Methods: The infants were evaluated (as neonates and between ages 4 and 6 months) for growth and development, socioeconomic factors, temperament, and cultural childrearing milieu and training factors. The investigator will attempt to determine, with correlational and factor analyses, influences on infant temperament, health, and development. (Temperament is the dependent and independent variable.) Trained college students, mothers, and medical and professional staff gathered data using the Brazelton Neonatal Assessment Scale, Carey Scale of Infant Temperament, an adapted Bayley Scale, standard anthropomorphic measurements, spot observations, and descriptive ethnographic methods. Data analysis will include correlation and multivariate analyses. A multidetermined, *multiple attribute* view of infant development will be determined using ecological, maternal, infant, and cultural categories.

Findings: Analysis of differences across cultures shows differences in temperament do exist within each tribe. Each African tribe has a markedly different temperament scor-

ing pattern. Each tribe scores more *difficult* than U. S. means. An analysis of troublesome temperament is taking place in relation to socioeconomic status, culture, and development, as well as family and maternal factors.

Duration: March 1974-December 1976.

Cooperating group(s): (1) Kenyan Health Ministry. (2) University of Nairobi, Bureau of Educational Research. (3) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

Publications: Data will be discussed in a paper: de Vries, M. and Sameroff, A. Influences on infant temperament in three East African tribes (in preparation).

EDUCATIONAL FACTORS AND SERVICES

General Education

38-OA-1 FOLLOW THROUGH: A STORY OF EDUCATIONAL CHANGE

Investigator(s): Susan W. Rath, B.S., Project Director; and Patricia Sposito, M.S., Study Director, Nero and Associates, Inc., 208 S. W. Stark, Portland, Oregon 97204.
Purpose: To document and describe the process school personnel and program personnel used to implement Project Follow Through; and to describe all aspects of the comprehensive program for low income families and children in grades kindergarten through three.
Subjects: Over 300 Follow Through staff members, parents, and related school staff interviewed at 10 sites.
Methods: Data were collected via open ended and semistructured interviews. Since the focus of the research was descriptive, no control groups were used. The research was designed to capture the experiences of those closest to the 9-year program, so that they might be shared with those contemplating major compensatory or innovative programs as well as those already involved in such programs.
Findings: See Publications below.
Duration: June 1975-September 1976.
Cooperating group(s): Project Follow Through; U. S. Office of Education; Education Division; U. S. Department of Health, Education, and Welfare.
Publications: *Follow Through: A story of educational change.* Portland, Oregon: Nero and Associates, Inc., June 1976.

38-OA-2 AWARENESS, INFORMATION, AND TRAINING STRATEGIES FOR PRESCHOOL PARENTS AND PARAPROFESSIONAL TEACHERS

Investigator(s): David L. Williams, Jr., Ed.D., Director; Renato Espinoza, Ph.D., Component Coordinator; Joyce Coleman, M.A., Component Coordinator; and Bill Butts, M.A., Component Coordinator, ECP/SEDL, Early Childhood Division, South West Educational Development Laboratory, 211 East Seventh Street, 4th Floor, Austin, Texas 78701.
Purpose: To design, develop, test, and assess the effectiveness of (1) Parenting Materials Information Center, (2) Multimedia Training Packages for Preschool Parents and Paraprofessional Teachers, and (3) Television Spot Public Service Announcements and Support Materials.
Subjects: A target audience of low income black, brown, and white parents of preschool children; and paraprofessional preschool teachers with little or no formal early childhood development education or training.
Methods: The Parenting Materials Information Center prototype will be placed in 20 preschool sites in order to test its applicability and usability in locating specific parenting

information upon target audience and other requests. The Multimedia Training Packages will be design, pilot, and field tested with target audience groups through the use of prepost knowledge of package instruments, media evaluation by participants, print material evaluations by participants, and participant evaluation of teaching strategies. The TV spots will be design, pilot, and field tested in selected TV markets where significant target audience populations are present. Response mode, frequency, ethnicity, income status, and viewer commentary are among the kinds of data that will be collected. Preferences for spot presentation modes will also be part of the data collected. All of this will be part of a summative evaluation report.

Duration: February 1974-October 1976.

Cooperating group(s): National Institute of Education; U. S. Department of Health, Education, and Welfare.

38-OA-3 ATTITUDES TOWARD MEN WHO TEACH YOUNG CHILDREN

Investigator(s): Kelvin L. Seifert, Ph.D., Assistant Professor, Early Childhood Education, Faculty of Education, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada.

Purpose: To assess the attitudes held by early childhood educators toward men who teach young children; to compare these attitudes with those toward women who teach young children; and to answer the questions: Do persons in early childhood education feel more positive, or less so, toward men in the field? What is the nature of any sex bias?

Subjects: A random sample of 100 female teachers of young children, ages 20 to 35; and a random sample of 50 male and female administrators of programs for young children, ages 25 to 50.

Methods: In a questionnaire, subjects are asked to rate various qualities and skills of an imaginary new teacher of young children. Subjects are randomly divided into two comparison groups: one group rated an imaginary male teacher, and the other rated an imaginary female teacher.

Findings: Teachers show little significant sex bias, partly because they rebel against stating generalizations about an ideal new teacher. Administrators show some fear of hiring men, and a preference for hiring women, but sample size is still too small to be certain.

Duration: Fall 1974-continuing.

Cooperating group(s): Teachers and school principals in the Winnipeg area.

38-OA-4 DEVELOPMENT OF AN ASSESSMENT TOOL FOR TEACHING EFFECTIVENESS MODELS

Investigator(s): Marce Verzaro-Lawrence, Ph.D., Coordinator, Human Development Labs, University of Tennessee, 1218 White Avenue, Knoxville, Tennessee 37916.

Purpose: To design an observational tool for assessing teacher effectiveness within an early education model.

Subjects: In pretesting: 20 teachers: three from Montessori, 10 from structured-cognitive, and seven from structured classes.

Methods: A survey of relevant literature was done to determine all possible teacher behaviors. Behaviors were then factor analyzed to determine clusters. Clusters were rear-

ranged to account for behaviors predicted to discriminate across models. Four types of instruments were pretested.

Findings: An instrument is ready for limited research use. Inter-rater reliability is currently .93.

Duration: September 1976-continuing.

Cooperating group(s): University of Tennessee, Faculty Research Council.

Publications: Information is available from Dr. Verzaro-Lawrence, 159 Thistle Lea, Williamsville, New York 14221.

38-OC-1 DISCIPLINE AND CLASSROOM BEHAVIOR OF THE INNER CITY CHILD

Investigator(s): John W. Hollomon, Ph.D., Associate Professor, Pamela Werton-Dalton, Ed.D., Assistant Professor; and Gloria Zamora, Ph.D., Assistant Professor, Division of Education, College of Multidisciplinary Studies, University of Texas, San Antonio, Texas 78285.

Purpose: To develop a list of inappropriate behaviors manifested by inner city children in classroom situations; to glean from this list the extent to which teachers perceive each kind of behavior to be intolerable under three categories; and to determine the frequency with which each inappropriate behavior was manifested in accordance with the ethnic and sex identities of the children over a specified period of time.

Subjects: 44 early childhood and elementary teachers (female), ages 25 to 52 (mean age, 28), whose teaching experience ranged from 2 to 25 years (mean, 7 years), and who represented a cross-section of ethnic identities. The sample also included 61 children, ages 5 to 12, taught by these teachers in grades kindergarten through 6. The ethnic and sex identities of the children were: 32 percent male and 27 percent female Mexican-Americans; 6 percent male and 2 percent female Black-Americans; 13 percent male and 12 percent female Anglo-Americans; and 4 percent male and 3 percent female other ethnic groups.

Methods: The teachers completed a questionnaire surveying personal and professional information, which included the socioeconomic status, number, and ethnic and sex identities of the children they taught. They were then asked to list no more than three inappropriate behaviors manifested by children in classroom situations, and to discuss, briefly, how they dealt with them. A list of inappropriate behaviors was compiled from this data, based on the frequency of each type of behavior listed by the teachers. The list was modified from 42 kinds of behaviors to 14, and included only behaviors mentioned at least five times by five different teachers. This final list, which comprised the Inappropriate Behaviors Instrument, was divided into three categories of behaviors: those that involve conflicts (1) in culture, (2) with society's roles and expectations, and (3) in personality. The Inappropriate Behaviors Instrument was administered to teachers to determine the extent to which they perceived each kind of behavior to be intolerable. The teachers were trained to the criterion of the event sampling technique, which yielded 61 classroom situations in which inappropriate behaviors were manifested. The data were analyzed to determine the extent of teacher intolerableness of the behaviors, and the ages, and ethnic and sex identities of the children who manifested them. A comparative analysis was made to determine the percentage of teachers perceiving each behavior to be intolerable, as well as the number and percentage of times each behavior was mentioned in the development of the instrument, with the frequency with which each behavior appeared in the event samples.

Findings: The extent to which teachers perceived a behavior to be intolerable and the frequency with which they listed it were not always in harmony with the frequency with

which that behavior appeared in the event samples. Teacher reactions to a child's behavior is more a function of the teacher's tolerance of a particular behavior than it is a function of the behavior itself. Conflicts between family cultural values and school social norms are manifested in the personality, needs, and dispositions of the children. More inappropriate behaviors were tallied for boys than girls; and more for Black, followed by Mexican-American, and Anglo children. That is, Black boys and girls receive an inordinate amount of disciplining procedures from teachers. The overriding conclusion was that teachers appear to be less intolerable of those behaviors manifested by children that cause the least amount of disruption in classroom routine, and which require the least amount of teacher intervention.

Duration: January 1976-March 1976.

38-OD-1 A SIXTH GRADE HEALTH EDUCATION PROGRAM UTILIZING A CAMP SETTING

Investigator(s): Thomas J. Durkin, Jr., Ed.D. Candidate, Health Resource Specialist, Beverly Public Schools Superintendent's Office, Colon Street, Beverly, Massachusetts 01915.

Purpose: To produce an ecologically oriented, humanistic, resident health education program for sixth grade pupils; and to determine the effect of such a program on selected healthful components of living.

Subjects: 160 male and female 6th graders, ages 11 and 12, drawn from nine heterogeneous classrooms participated in the resident health education program; and a total 6th grade population of 607 from a middle class community of coastal northeastern Massachusetts participated in the study.

Methods: Students were divided into three groups, all of which participated in the school system's standard health education curriculum with the following differences: Group A remained in the community and participated in the standard curriculum; Group B participated in a 5-day resident camp experience, the focus of which was nature study and environmental education; and Group C participated in a 5-day resident camp experience, the focus of which was healthful living concepts and behaviors. All groups took the Yellen Health Behavior Inventory-Elementary Level and the Martinek, Zaichkowsky Self-Concept Scale for Children. Pretesting was done in February 1976; posttesting, in June 1976. All students subjectively evaluated each of 5 days during the resident experience on a scale of 1 to 9. The Cheffers adaptation of the Flanders System of Interactional Analysis was used in pretesting, during the resident experiences (April 1976), and in posttesting (June 1976) to evaluate teacher, student, and environment interaction. The study provides a large sample drawn from a public school system with groups participating in distinctly different programs at the same time. Random selection of students and extensive testing undertaken should provide reliable data. Alternative methods of presenting comprehensive, sequentially developed health education curriculums have not, to date, received intensive investigation. Statistical treatment will involve the use of t-tests, analysis of variance, two-way analysis of variance with repeated measurements, and appropriate graphic representations.

Findings: The students are receptive to a healthful living theme as the focus of a week's camping experience. Parents and the school administration consider the experiment a success: 94.5 percent responded to a parent questionnaire; 94.3 percent of those responding evaluated the program as good to very good; 100 percent felt it should be continued as a regular part of the curriculum; 95.3 percent felt the camp was an effective setting for stressing healthful living behaviors; and 55.7 percent felt they definitely detected some positive change in their child's health habits as a result of the experience.

Duration: May 1975-January 1977.
Cooperating group(s): (1) Boston University, School of Education, Department of Movement, Health and Leisure, and the Human Environment Institute. (2) Beverly Public Schools.
Publications: Data and results will be available in a dissertation presented to the Department of Movement, Health and Leisure, School of Education, Boston University, Boston, Massachusetts 02215.

38-OF-1 ADAPTIVE ABILITIES AND ACADEMIC PROGRESS

Investigator(s): Eric W. Trupin, Ph.D., Assistant Professor; Brenda D. Townes, Ph.D., Associate Professor; and Ralph M. Reitan, Ph.D., Professor, University of Washington, School of Medicine, C304 Health Sciences Building, Seattle, Washington 98105.
Purpose: To study the neurological correlates of academic success and failure among early elementary school children.
Subjects: 200 kindergartners and 200 second graders: half boys, half girls.
Methods: The Reitan Neuropsychological Test Battery was administered to kindergartners in kindergarten and again in first grade, and to second graders in second and in third grade. Neuropsychological factors related to academic achievement, medical findings, and behavior ratings made by parents and teachers will be assessed through multivariate regression procedures.
Duration: July 1976-June 1979.
Cooperating group(s): (1) Lake Washington School District, Kirkland, Washington. (2) Spencer Foundation.
Publications: (1) Townes, B. D. and Trupin, E. W. Neuropsychological evaluation as an adjunct to behavioral interventions with children. *Professional Psychology,* 1976, 7(2), 153-160. (2) A paper presented at the course, "Learning Disorders: Exploring the Problem," Continuing Education in the Health Sciences, University of British Columbia, Vancouver, B.C., March 1976: Townes, B. D. and Trupin, E. W. Competence: Strategies for treating the child with learning and behavioral difficulties.

38-OG-1 PARENT-PROFESSIONAL-CHILD INTERACTION AND INVOLVEMENT PROJECT

Investigator(s): Earl S. Schaefer, Ph.D., Principal Investigator, Frank Porter Graham Child Development Center, University of North Carolina, Highway 54 Bypass West, Chapel Hill, North Carolina 27514.
Purpose: To investigate the importance of parents' participation in their child's education; to develop instruments to measure the attitudes of parents, teachers, and children toward each other and toward aspects of education; and in 1976-1977, to implement and evaluate an intervention program involving parents in home based learning.
Subjects: The 1975-1976 sample consisted of 26 teachers and 104 families with children in kindergarten and 1st grade randomly selected from 10 school systems in Piedmont, North Carolina, stratified on race and sex. In the 1976-1977 sample were 25 teachers, 100 experimental families, and 100 control families in four school systems.
Methods: Pre-, post-, experimental, and control designs were established for the 1976-1977 intervention program. Attitudinal and behavioral data will be collected from principals, parents, teachers, and children using nine instruments developed in the first 2 years plus a measure of child ability (TOBE) and adjustment (Classroom Behavior Inventory).

Findings: Parent interview variables are related to child achievement and adjustment more strongly than are teacher variables or parent-teacher relationship variables. This suggests the value of working with parents.
Duration: July 1974-July 1977.
Cooperating group(s): Office of Child Development; Office of Human Development; U.S. Department of Health, Education, and Welfare.

38-OG-2 EVALUATION OF A MODIFIED BRONFENBRENNER QUESTIONNAIRE ASSESSING CHILDREN'S PERCEPTIONS OF TEACHER BEHAVIOR

Investigator(s): Elizabeth J. Koopman, Ph.D., Assistant Professor; and Nancy Shroeder, M.A., Advanced Doctoral Student, Institute for Child Study, College of Education, University of Maryland, College Park, Maryland 20742.
Purpose: To evaluate an instrument designed to assess students' perceptions of teacher behavior.
Subjects: 78 boys and 61 girls, grades 4 to 6, in a suburban Washington, D.C. school.
Methods: The study involved a factor analysis of the Bronfenbrenner Questionnaire, modified for use in an elementary school setting, replicating Siegelman's analysis of the Bronfenbrenner Parent Behavior Questionnaire (*Child Development,* 1965, 36, 163-174). Determination of reliability through test-retest design was done.
Findings: Test-retest reliabilities ranged from .69 for the *Power* variable to .85 for the *Expressive Rejection* variable. Three teacher behavior factors were derived from the varimax rotational factor analysis: *Loving, Punishing, Demanding.* These complement and corroborate Siegelman's findings.
Duration: Spring 1975-Fall 1976.

38-OG-3 AUTHORITY AND HUMAN DEVELOPMENT IN THE CLASSROOM

Investigator(s): Harry L. Summerfield, Ph.D., Research Psychologist, The Wright Institute, 2728 Durant, Berkeley, California 94704.
Purpose: To ascertain the effects of the social structure of schools on intrapsychic and social characteristics of children.
Subjects: Elementary school children in an upper middle class all white school, and a very low income, all black school.
Methods: One observer made naturalistic observations of children without experimentation which were supplemented by interviews with teachers and children.
Findings: Schools have effects on deeper structures of personality—the unconscious—and these effects are of mixed value.
Duration: June 1973-August 1976.
Cooperating group(s): National Institute of Education; U.S. Department of Health, Education, and Welfare.
Publications: Papers are available upon request.

38-OG-4 EFFECTS OF COMPETENCY-BASED TEACHER EDUCATION PROGRAMS ON CHILDREN'S LEARNING AND SELF-CONCEPT

Investigator(s): Ronald Goldenberg, Ph.D., Assistant Professor and Coordinator of Student Teaching; and William Capie, Ph.D., Associate Professor, Professional Laboratory Experiences, College of Education, University of Georgia, Athens, Georgia 30601.

Purpose: To assess the impact competency-based teacher education (CBTE) field-based programs have upon the children in cooperating school systems.
Subjects: 67 boys and 56 girls, ages 6 to 10, attending small city schools. Control and experimental groups closely approximate each other in race, IQ, and socioeconomic status.
Methods: Classrooms of children were studied longitudinally. There were two classrooms of control children; two classrooms (from another school) of experimental children, who had no experience with teacher education programs; and two classrooms of experimental children who had participated for at least 1 year in CBTE. Pre- and posttesting were done with a semantic differential type self-concept measure developed for the study. Achievement and/or readiness test scores (Iowa Test of Basic Skills and Metropolitan Readiness Test) were used as pre- and postmeasures. In addition, teachers' written evaluations were used as measures of scholastic and social growth.
Findings: Early in the study it appeared as if there might be differences in self-concept between experimental and control groups. It is too early to tell if there are differences in learning, since children involved with CBTE interns are receiving more individualized instruction. It is hypothesized there will be fewer experimental students who score below grade level on standardized tests of achievement when results of statistical treatments are analyzed.
Duration: June 1976-June 1977.
Cooperating group(s): Georgia Public Schools.

38-OG-5 PRESCHOOL IDENTIFICATION OF AT RISK CHILDREN

Investigator(s): H. C. Grocott, M.B., B.S., Director, Child Health Division; and Mary B. Glennon, M.Ed., Educational Psychologist, Saskatchewan Department of Public Health, Health Region #8, Saskatoon Rural, 516 - 2nd Avenue North, Saskatoon, Saskatchewan, Canada S7K 2C5.
Purpose: To determine, at age 4, the antecedents of poor achievement/adjustment by the end of the primary grades, in order to establish a screening program that would make possible early identification and intervention.
Subjects: 300 girls and boys, ages 3 to 4, randomly selected from representative Saskatchewan Health Regions.
Methods: Tests and questionnaires administered to subjects and their parents in 1970-1971 were correlated with measures of achievement/adjustment administered in 1975-1976. Statistical treatment of data focused on the efficiency of the 1970-1971 variables as predictors of the current status of the subjects, with a view to the cost benefit aspect of a possible screening program using these predictors.
Findings: Discriminant analysis reveals that these factors show promise as predictors: birth history, age of onset of connected speech, handedness, verbal ability, fine motor skills, and socioeconomic status.
Duration: 1970-1977.
Cooperating group(s): National Health Grant, Canada.
Publications: The final report is available from: The Library, Provincial Health Building, Regina, Saskatchewan, Canada.

38-OG-6 IRISH PUPILS' CIVIC ATTITUDES

Investigator(s): John Raven, Director, Competency Motivation Project, 70 Hillcourt Road, Glenageary Co., Dublin, Ireland.
Purpose: To ascertain how far the goals of general education (which include the develop-

ment of a sense of efficacy, tolerance for others, willingness to work with others, and willingness to play an active role in the community) are attained; and to relate variance and outcomes to variance in educational practices and procedures and the beliefs and attitudes of pupils.

Subjects: 800 pupils, age 14; 800 pupils, age 18; and 350 teachers of civics and related subjects. The sample is nationally representative.

Methods: Data were collected through questionnaires. Analysis procedures included tabulation, factor analysis, multiple regression, and multiple discriminant analysis.

Findings: The goals of general education are being attained very poorly. Teachers are not using the methods which would be expected to enable them to reach these goals. Yet, the variance in outcomes is unrelated to variance in educational procedures. The descriptive picture of pupils' values, attitudes, and perceptions and expectations is alarming from the point of view of the future of the country.

Duration: 1974-1977.

Cooperating group(s): Department of Education, Dublin, Ireland.

Publications: (1) Litton, F. and Raven, J. *A survey of pupils' civic attitudes.* Dublin, Ireland: Institute of Public Administration (57 Lansdowne Road, Dublin 4, Ireland), 1977. (2) Raven, J. and Litton, F. Irish pupils' civic attittudes. *Oideas,* Spring 1976, 16, 16-30.

38-OH-1 PUPILS' PERCEPTIONS OF EDUCATIONAL OBJECTIVES AND PUPIL MOTIVATION AND VALUES

Investigator(s): John Raven, Director, Competency Motivation Project, 70 Hillcourt Road, Glenageary Co., Dublin, Ireland.

Purpose: Study I: To ascertain pupils' felt needs from education and to compare them with their teachers' views, so that they can be used to design more appropriate courses; to ascertain the way in which these views varied with the pupils' backgrounds and aspirations and the type of school they attended; and to ascertain pupils' reactions to the courses of education they took at the time of the study. Study II: To examine what might be done about the problem of lack of motivation by studying pupils' values and interests and their reactions to alternative types of reward and punishment.

Subjects: A nationally representative sample of 4,222 pupils, ages 14 to 19.

Methods: Study I: Survey tabulations, factor analyses, correlation, and multiple regression analyses were conducted. Study II: Self-Completion Questionnaires were personally collected. Analysis was done by standard survey procedures.

Findings: Study I: Pupils' felt needs are not being met, yet these are, with one or two important exceptions, similar to their teachers' views. Variance in felt needs is more closely related to the pupils' occupational aspirations than to their backgrounds. Study II: There is a serious basic problem, in that teachers are unable to work toward the goals which they, the pupils, and their parents believe to be the most important. Teachers do not know what pupils' values and interests are. Most of these are grossly neglected. Systems changes are required to encourage teachers to work toward their goals and to vary these from pupil to pupil.

Duration: 1969-1976.

Cooperating group(s): Department of Education, Dublin, Ireland.

Publications: (1) Raven, J. *et al. Pupils' perceptions of educational objectives and their reactions to school and school subjects.* Dublin, Ireland: Irish Association for Curriculum Development (1 Bellevue Road, Dun Laoghaire Co., Dublin, Ireland), 1975. (2) Raven, J. *Pupil motivation and values.* Dublin, Ireland: Irish Association for Curriculum Development, 1976.

38-OK-1 EVALUATION OF THE EFFECTS OF THE EMERGENCY SCHOOL AID ACT (ESAA) PROGRAM

Investigator(s): John E. Coulson, Ph.D., Deputy Department Manager, Studies and Evaluation Department, System Development Corporation, 2500 Colorado Avenue, Santa Monica, California 90406.

Purpose: To evaluate the effects of ESAA Basic and Pilot Programs on students' reading and math achievement and on school climate.

Subjects: 20,000 low achieving girls and boys (in each of 3 school years), including a large percentage of minority students. The children (roughly equal proportions of males and females) attended grades 3 to 5 and 10 to 12, drawn from a national sample of 180 schools.

Methods: ESAA is a federally funded program to help school districts that have recently desegregated or are in the process of desegregating. Pre- and posttests in reading and math and a measure of school climate were administered each year to matched treatment groups (ESAA funded schools) and control groups (non-ESAA funded schools). Questionnaires obtained data on the students, schools, and programs. A special in-depth study was done on a subsample of the schools using on-site observations and interviews.

Findings: There is no clear evidence of program impact so far, possibly because *control* schools receive other compensatory funds that may offset ESAA funds in treatment schools. Achievement appears to be helped by teachers' use of behavioral objectives, by assertive leadership on the part of principals, and by use of more concentrated resources.

Duration: March 1973-November 1977.

Cooperating group(s): (1) Office of Planning, Budgeting, and Evaluation; U.S. Office of Education; U.S. Department of Health, Education, and Welfare. (2) American College Testing. (3) University of California, Los Angeles, Center for the Study of Evaluation.

Publications: (1) *The first year of Emergency School Aid Act (ESAA) implementation.* SDC TM-5236/008/00. Santa Monica, California: System Development Corporation, September 1975. (2) Second year report was released August 1976.

38-OK-2 THE POLITICAL IMPLICATIONS OF SCHOOL INTEGRATION

Investigator(s): Bruce A. Campbell, Ph.D., Assistant Professor of Political Science, Department of Political Science and Institute for Behavioral Research, University of Georgia, 624 Graduate Studies Research Center, Athens, Georgia 30602.

Purpose: To apply a model of the socialization process to the investigation of two outcomes of school integration that have political implications: (1) the quality of the educational experience (in particular, the question of whether this level of quality changes as a result of integration, and the question of what is responsible for any observed change); and (2) the explanation of a number of political attitudes (whether the school environment can be used to explain the increasingly high levels of cynicism and distrust that have been observed in black adolescents).

Subjects: 944 high school seniors (class of 1974) in the Atlanta area; their parents (72 percent of the families responded); their teachers (55 percent responded); and principals (100 percent responded).

Methods: The socialization model posits three agents as contributors to the outcomes of interest: the family, the school, and the peer group. The study sought to measure the influence of each of these. Six high schools were selected to fit a 2 X 3 factorial design. One dimension differentiates along the socioeconomic level of the student body in the

school (high and low), and the other considers degree of integration (all black, integrated, all white). A random sample within each school was used to select 200 students per school who would respond to an interview. In addition, parents were contacted through a mail/mail-back questionnaire, and the peer influence was ascertained by aggregating information from the interviews of five friends named by each respondent. School characteristics were ascertained through a questionnaire administered to teachers and an inventory completed by the principal.

Duration: June 1973-completed.

Cooperating group(s): (1) National Institute of Education; U.S. Department of Health, Education, and Welfare. (2) National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: (1) The impact of school desegregation: A test of three mediating variables. *Youth and Society,* September 1977, 8(3). (2) Racial differences in the reaction to Watergate: Some implications for system support. *Youth and Society,* June 1976, 7(4). (3) A paper presented at the annual meeting of the Southwestern Social Science Association, Dallas, Texas, April 1976: The impact of school desegregation: A test of three mediating variables. (4) A paper presented at the annual meeting of the Southern Political Science Association, Nashville, Tennessee, November 1975: Peer influence in political socialization. (5) A paper presented at the annual meeting of the American Political Science Association San Francisco, California, September 1975: The acquisition of political trust: Explorations of socialization theory.

Specific Skills

38-PB-1 AN INTEGRATED PROGRAM FOR SPEECH AND LANGUAGE DELAYED PRESCHOOLERS WITHIN A DAY CARE CENTER

Investigator(s): Patsy Pearce, M.S., Speech Pathologist, Burrard Health Unit, Vancouver Health Department, 1060 West 8th Avenue, Vancouver, B.C., Canada V6H 1C4.

Purpose: To demonstrate the feasibility of managing delayed speech and language development by stimulating development in a normal setting with nonprofessional resources.

Subjects: Four boys and one girl, age 3, who have moderate to severe language delays; and a control group matched for age and language delay.

Methods: A matched groups, posttest-only control group design was used. Instruments administered included the Preschool Language Scale, Peabody Picture Vocabulary Test, and the Columbia Mental Maturity Scale. Language samples were taken and analyzed as the primary measurement device (i.e., mean length of utterance-MLU and semantic categories). Linguistic delays of all children were determined from standardized tests and language samples. The primary worker was a preschool teacher, and a speech pathologist acted as trainer and consultant. After training the nonprofessional resource person, speech and language development was compared in experimental and control groups by the speech pathologist.

Duration: August 1976-July 1977.

Cooperating group(s): Vancouver Resources Board.

Publications: Results are available from the investigator.

38-PB-2 THE RELATIONSHIP OF ATTENTION SPAN TO READING PERFORMANCE IN MEXICAN-AMERICAN CHILDREN

Investigator(s): Richard W. Sherfey, Ed.D., Reading Facilitator, Tucson Public Schools, P.O. Box 4040, Tucson, Arizona 85705.

Purpose: To investigate the relationship between a simple and a complex attention span task and the reading performances of selected Mexican-American children.

Subjects: 50 girls and 50 boys, mean age 8.5, randomly selected third graders enrolled in three public elementary schools located on the United States Mexico border. Spanish is the predominant language in the business and community life of the area.

Methods: After rapport setting of 6 weeks with subjects, a screening test was administered to them, in order to eliminate any subject who could not recognize instantaneously the stimuli to be used. Each subject was given two testing conditions: a simple and a complex attention span task. A complete counterbalancing of the two tasks followed. In each condition, subjects responded to stimuli that were presented simultaneously to their visual and auditory channels through the media of a slide projector and a tape recorder. The presentation order of the stimuli was randomly assigned with the rate of presentation for the signal and nonsignal word or word series being one word or word series every 9 seconds. All correct and false detections were recorded. Also, as the subject responded to the stimuli, time notation (in minutes and seconds) was recorded when the subject exhibited any or all of three distinct physical behaviors. Subjects' reading performance scores were taken from the Stanford Achievement Test, Primary Level II, Form A, administered to all children by their third grade teachers. Additionally, a pupil rating scale was developed in order for the teacher to rate each subject as to his most realistic time in attending to a reading activity in the classroom.

Findings: A two-way analysis of variance for repeated measures was calculated for correct and false detection variables. Significant differences were obtained beyond the .01 level of confidence for task complexity on both the correct and false detections. No significant differences existed between male and female performances, nor was an interaction present across the two factors, sex and task complexity. An overview of the correlation matrix shows a low but significant relationship between teachers' judgment of attention span, correct detections in the complex attention span task, and the reading performances. A significant correlation of .19 was obtained between correct detections, complex attention span task, and reading performances. A moderate correlation was reported between teachers' judgment of attention span and reading performance of the subject.

Duration: September 1974-completed.

Publications: Information is available from the investigator.

38-PB-3 SOME LONG-TERM EFFECTS OF THE REMEDIAL TEACHING OF READING

Investigator(s): P. D. Pumfrey, M.Sc., M.Ed., Senior Lecturer; and D. Tobin, M.Sc., Educational Psychologist, Department of Education, University of Manchester, Manchester M13 9PL, England.

Purpose: To assess the long-term effects of differential prior treatment on retarded readers.

Subjects: 150 pupils, all in need of remedial teaching of reading at the junior school stage (75 received extra help; 75 did not).

Methods: Both groups were followed up at ages 13 to 14 in secondary school. Using a three-way ANOVA model, the dependent variables of pupils' reading attainments and attitudes were analyzed in relation to the independent variables of treatment (i.e., having or not having received remedial teaching in primary school), sex, and type of secondary school (Catholic or secular).
Findings: Pupils in the treatment group had significantly higher word recognition reading ages than pupils in the control group at the time of transfer to secondary schools. At follow-up, using tests of word recognition and reading comprehension, significant second order interactions appeared. Using an attitude to reading scale, a further second order interaction was found. The results are discussed in terms of the quality of remedial provision in secondary schools.
Duration: 1974-1976.
Publications: Some long-term effects of the remedial teaching of reading. *Educational Review,* November 1976. (University of Birmingham, England.)

38-PB-4 EARLY INTERVENTION THROUGH TECHNOLOGY

Investigator(s): D. R. Steg, Ph.D., Professor; Anthony D'Annunzio, Ed.D., Associate Professor; Karen Spielman, Ph.D., Research Associate; and Barbara Leech, Graduate Assistant, Department of Human Behavior and Development, Drexel University, 33rd and Market Streets, Philadelphia, Pennsylvania 19104; and Marciene Mattleman, Ed.D., Professor, Department of Elementary Education, Temple University, Ritter Hall, Philadelphia, Pennsylvania 19122; Michael Kean, Ph.D., Director, Research and Development, Philadelphia Board of Education, 21st and Parkway, Philadelphia, Pennsylvania; and Cheryl Fox, NIMH Grantee, Department of Human Development and Family Studies, Cornell University, Ithaca, New York 14850.
Purpose: To answer the questions: (1) What is known about early experiences in reading for pre-elementary children? (2) How can a voluntary, individually oriented reading approach encourage performance gains for children regardless of socioeconomic background? (3) What are the necessary components in developing an early reading program that can be generalized to other populations without specific teacher training? (4) What will be the long-range effects on achievements of pupils with early training using the Responsive Environment?
Subjects: Initial investigation: 40 children, mean age 3.49, half tuition paying and half Get-Set (Philadelphia Head Start) students. The mean IQ for the tuition group was 116.5 as measured by the Stanford-Binet Intelligence Scale (1960 revision), and 71.8 for the Get-Set subjects. Fifteen Get-Set subjects were available for follow-up study (all those who could be traced). Subjects were enrolled in the program for an average of 2.54 years.
Methods: The present study was undertaken as an attempt to develop a technologically based early reading and language program for children, ages 3 to 6, who attended Drexel University's Early Childhood Center. The initial group of subjects were followed in order to gauge the gains of treatment. Treatment consisted of daily sessions no more than 20 minutes in length. The primary component of this treatment was work on a computer based typewriter (Moore and Anderson), the Responsive Environment. (The machine may be programmed in a variety of ways to correspond with the purpose of investigation.) A combination of both automated and nonautomated equipment was used. The determination of the instrument for a given day was based upon the descretion of the teacher; however, all subjects received approximately 80 percent of the total instructional time on the automated machine. The nonautomated equipment contained a typewriter, as well as audiovisual equipment, such as the *talking page,* and commercial material. Work was ar-

ranged to accentuate subjects' auditory or perceptual strengths and to remediate weaknesses secondarily; the ratio for that balance was 3:1. Programming objectives were the demonstration of skills in (1) recognizing alphabet letters, (2) typing letters from dictation, and (3) reading words orally. Teachers also worked with children on individual experience stories which were then programmed for the equipment. For the 15 available subjects, data were collected and analyzed using both correlational procedures and regression analysis: (1) the hours and minutes spent on the Responsive Environment equipment; (2) the number of months enrolled in the Center; (3) the age in years and months on entering the Center, and age of the child at the time of testing; and (4) Peabody Picture Vocabulary Test (PPVT), Frostig Developmental Test of Visual Perception (DTVP), Illinois Test of Psycholinguistic Abilities (ITPA), and the Illinois Test of Psycholinguistic Abilities, both Visual and Auditory (ITPA-V and A). The tests were administered at entrance to the Center, twice annually thereafter until the child left the Center, and once annually thereafter until the present. Four tests were available for the child annually since kindergarten: (1) the Wide Range Arithmetic Test (WRAT), (2) Wide Range Reading Test (WRRT), (3) Informal Word Recognition Test (IWRT), and (4) Informal Reading Inventory (IRI).

Findings: Results of the first year's investigations were encouraging since both tuition and nontuition subjects showed similar learning rates. Recognition of all upper case and some lower case letters was achieved. At the end of this phase, all students could type their own names but not other words; they could also recognize their names but not any other configurations. As years progressed in the Center, the relative improvement of the Get-Set children was much greater than that of the tuition group. This was apparent in measured skill acquisition and in the children's psycholinguistic development. The most important finding seems to be that the time on the machine and the period of students' enrollment (the time they were in the Center school) has a statistically significant positive correlation with their performance on WRAT, WRRT, and IRI. Findings indicate that regardless of the children's initial IQ scores on the PPVT or scores on the DTVP and the ITPA-V and A, they nevertheless performed at or above present grade level on achievement tests in both reading and arithmetic. The pre-mean IQ was 71.8; post-mean IQ for 1974, 98.2; and for 1975, 94.6. An attempt was made to compare the distribution of the California Achievement Tests in the Philadelphia school system with the Drexel testing. Nine children were found who had test scores for 1975 for both Drexel and the Philadelphia tests. The high correlation levels found are an indication that the Philadelphia test scores were showing the same distribution as the Drexel test scores. If this relationship continues in 1976, the Philadelphia school test scores can be linked with the Drexel scores in an analysis of differences between the 1976 scores and the 1975 scores, and between the 1976 scores and the first Drexel scores test for test.

Duration: 1967-1978.

Cooperating group(s): Bernard Van Leer Foundation, The Hague, Netherlands.

Publications: Interim reports are available from: Bernard Van Leer Foundation.

38-PC-1 DEVELOPMENT AND ASSESSMENT OF SCIENCE CURRICULAR MATERIALS IN EARLY CHILDHOOD EDUCATION

Investigator(s): Lloyd M. Bennett, Ph.D., Professor of Science Education, Texas Woman's University, P.O. Box 22846, Denton, Texas 76204.

Purpose: To develop and implement science curricular materials for the 2½- to 7-year-old child in normal classrooms as well as in classrooms with special needs; to identify and develop simple evaluative instruments that can be used with the nonreader to assess per-

formance based learning; and to evaluate previously prepared nationally oriented science programs to ascertain the viability of these programs for the early childhood classroom.
Subjects: Approximately 500 boys and girls, ages 2½ to 7, from 25 to 30 structured classrooms in public and private schools and day care centers. The children represent all ethnic, cultural, and socioeconomic backgrounds, including special needs classrooms (deaf, special education, etc.).
Methods: Pre- and posttest instruments are used to obtain data in which the gain in scores after treatment is evaluated. The pretest serves as a control and the posttest as the experimental measure. The difference in the two testing sessions after treatment is statistically evaluated by nonparametric and parametric means. The treatment consists of the regularly assigned teacher or a graduate student teaching a science unit (module) to the class after pretesting for a minimum of 10 class days. There are 162 units on all science subjects available to use with these groups.
Findings: Preschool (early childhood) children in this age bracket in normal classrooms can and do learn science. Special needs children can and do learn good science. There is no area of science that, so far, is precluded from implementation in these classrooms.
Duration: 1968-continuing.
Cooperating group(s): Schools in the Dallas-Fort Worth Metropolitan and North Texas areas.
Publications: Review by Donald Reichard. *Science Education,* October-December 1973, 57(4).

38-PD-1 A TEST OF DIALECT AND SPELLING

Investigator(s): Patrick Groff, Ed.D., Professor, Department of Elementary Education, San Diego State University, San Diego, California 92115.
Purpose: To investigate the relationship between Black English and spelling.
Subjects: 310 children in grades, 4, 5, and 6, who attend low income city schools.
Methods: The Word Test by Donna Kligman and Bruce Cronnell in *Black English and Spelling* (SWRL, 1974) was used. Children heard a word which they were asked to spell (differing from the Kligman and Cronnell study, in which children chose between multiple choice spellings of the word). The percent of dialect related error found by Kligman and Cronnell was compared with the percent of dialect related error found in this study.
Findings: Practically no relationship between dialect and spelling was found as contrasted to the Kligman and Cronnell study.
Duration: June 1975-June 1976.
Cooperating group(s): San Diego State University Foundation.

Special Education

38-QD-1 DIAGNOSTIC AND PRESCRIPTIVE TECHNIQUES IN EDUCATION OF EMOTIONALLY DISTURBED CHILDREN

Investigator(s): Everett F. Kelley, M.Ed., Director of Education, Convalescent Hospital for Children, 2075 Scottsville Road, Rochester, New York 14523.
Purpose: To develop diagnostic and prescriptive techniques to use in educating emotionally disturbed children.

Subjects: 159 seriously, emotionally disturbed children, ages 3 to 14. Ninety percent of the population is male.

Methods: Evaluation and research are an ongoing and integral part of the work of the Convalescent Hospital for Children. Individually administered achievement, psychological, and language appraisals are done upon a child's entrance into the program and at least annually (late July). Objective evaluation tools will be the Illinois Test of Psycholinguistic Abilities (ITPA), the Wechsler Intelligence Scale for Children-R (WISC-R), the Peabody Picture Vocabulary Test (PPVT), the Frostig Developmental Test of Visual Perception (FDTVP), and the Peabody Individual Achievement Test (PIAT). Subjective evaluation of behaviors is done by analysis of televised miniteaching and testing situations by a professional evaluation team consisting of a psychologist, educational therapist, educational classroom aide, language coordinator, and the project director. A method of predicting achievement based on extrapolation of past learning as measured by ITPA testing was used to measure the degree of success of each child's instructional program.

Findings: A total of 108 children were comprehensively evaluated by the team. Of these children, 22 received daily language therapy. The average gain in psycholinguistic ability was 2.7 years for this group. Sixty-four children were taught basic psycholinguistic skills within the academic classroom utilizing materials purchased with grant funds. No statistical comparisons were made as there was no control group. All but two children exceeded predicted scores of achievement based on extrapolation of past learning as measured by the ITPA. The average difference for these children was 9 months total test gain beyond predicted attainment.

Duration: July 1973-continuing.

Publications: Materials are available from the investigator.

38-QE-1 SOCIAL HANDICAP AND COGNITIVE FUNCTIONING IN PRESCHOOL CHILDREN: PHASE II—CURRICULUM DEVELOPMENT AND EVALUATION

Investigator(s): A. M. Curtis, B.A. (Hons.), M.Sc.(Ed.), National Foundation for Educational Research in England and Wales, The Mere, Upton Park, Slough, Berks SL1 2DQ, England.

Purpose: To develop, in conjunction with practicing teachers, methods and materials to assist socially disadvantaged children to obtain full benefit from school activities; and to produce a handbook appropriate for day-to-day use by nursery staff with preschool children.

Subjects: Socially disadvantaged preschool children.

Methods: Recent research into early childhood education has indicated that compensatory programs, particularly those in the U.S.A., have been of some value to children, but their value does not appear to be dependent upon specific techniques. The programs have provided opportunities for children to increase their powers of concentration, and to help them deal with the sort of tasks they will have to cope with in school. Phase I of this project attempted to establish factors which were significant in determining the ability of the child to cope successfully with the normal school learning process. A number of aspects were investigated; in particular, powers of concentration, motivation, ability to cooperate with adults, and ways of solving problems. Phase I of the project will be conducted in two stages: Stage I: Teacher Group Activities. In Stage I, the research team, working in cooperation with teacher groups in selected areas, prepared materials and strategies for trial and modification within the teachers' own schools and classes. Stage II: Trials and Evaluation. In Stage II, material chosen from earlier trials will be

distributed, and the extent to which the program has compensatory effects on children with educational disadvantages will be assessed by the selective use of test materials.
Findings: Results appear to indicate differences between children from different social classes in ability to solve problems, sustain attention, and cooperate with an adult.
Duration: September 1975-March 1978.

38-QF-1 THE EFFECTS OF CHILDHOOD LEARNING DISORDERS ON SUCCESS IN LATER LIFE

Investigator(s): Allen Toronto, Ph.D., Assistant Professor; and Empress Zedler, Ph.D., Chairman, Department of Special Education, Southwest Texas State University, San Marcos, Texas 78666.
Purpose: To determine the effects of childhood learning disorders on success in later life.
Subjects: 125 adults, ages 20 to 35, who as children had been seen at Southwest Texas State University and were diagnosed as having learning disorders. Some had received therapy; some had not.
Methods: Participants were located, interviewed personally, and given questionnaires. Descriptive statistics and regression analyses were used for the bulk of statistical treatment.
Duration: September 1975-September 1976.

38-QF-2 THE EDUCATION OF MILDLY INTELLECTUALLY HANDICAPPED CHILDREN IN AUSTRALIA: PHILOSOPHIES, PRACTICES, AND OUTCOMES

Investigator(s): B. H. Watts, Ph.D., Professor of Special Education and Director, Fred and Eleanor Schonell Educational Research Centre, University of Queensland, St. Lucia, Brisbane, Queensland 4067.
Purpose: To assess aspects of mildly intellectually handicapped children's functioning related to educational placement.
Subjects: 600 girls and boys, ages 10.0 to 11.11, who have been categorized by education systems as being mildly intellectually handicapped.
Methods: The design includes the assessment of various aspects of children's functioning in several situations regarding their educational placement (regular schools and classes with or without specialist support services; special schools and classes). Methods of data collection include standardized tests for children, structured interviews with parents and senior education department personnel, and questionnaires for teachers. The research is primarily aimed at discovering teachers' perceptions of appropriate educational placements for such children.
Duration: January 1976-March 1977.
Cooperating group(s): State Education Departments of Queensland, New South Wales, and Victoria.

38-QF-3 DETERMINANTS OF VIOLENT SOCIAL BREAKDOWN IN LOWER CLASS LEARNING DISABLED CHILDREN

Investigator(s): Suzanne Salzinger, Ph.D., Associate Research Scientist, Biometrics Research Unit, New York State Department of Mental Health, 722 West 168th Street, New York, New York 10032.

Purpose: To locate the determining stimuli, during dyadic peer interactions, that produce physically aggressive behavior, in order to use such information prophylactically to arrange learning environments that avoid such stimuli.
Subjects: 10 learning disabled children, ages 8 to 9 (six male, four female), from the urban lower class, who had been placed in a special class.
Methods: The children were videotaped in pairs as they played in a laboratory playroom. The tapes were content analyzed for the characteristics of the children, their relationship to each other, and the stimuli they provided each other during the ongoing play session that served to elicit physically aggressive behaviors.
Findings: An initial survey of the tapes of ninety 15-minute sessions indicates that violent social breakdowns occurred in at least one-third of the sessions. This represents a very high incidence, which warrants a further search for the determining stimuli producing such behaviors.
Duration: September 1975-September 1977.
Cooperating group(s): (1) New York State Psychiatric Institute, Biometrics Research. (2) Manhattan Children's Psychiatric Treatment Center, Ward's Island, New York, New York.

38-QF-4 EVALUATION OF VISUAL PERCEPTUAL SKILLS AS RELATED TO LEARNING DISABILITY

Investigator(s): Stuart M. Podell, O.D., Assistant Clinical Professor; Stuart L. Krieger, O.D., Assistant Clinical Professor; Harry A. Walker, Ph.D., Psychologist; and Florence Springer, M.A., Psychologist, State College of Optometry, State University of New York, 122 East 25th Street, New York, New York 10010.
Purpose: To organize a battery of visual perceptual tests to be utilized in the diagnosis of children with learning disabilities; and to evaluate visual perceptual function as it relates to end organ visual function.
Subjects: 160 children, ages 8 to 11 (40 in each group).
Methods: Tests chosen were checked for validity and reliability and were administered to the children by three independent examiners. Scores were subdivided into categories of visual perception. Each category was evaluated in relation to the child's specific learning disability. An evaluation was conducted of the relationship between the cognitive perceptual skills and end organ visual functions.
Duration: September 1976-June 1977.

38-QF-5 USE OF VISUAL IMAGERY TO AID CHILDREN WITH READING DISABILITIES

Investigator(s): Karen Olness, M.D., Associate Professor of Pediatrics and Director of Medical Education; Bruce Agneberg, M.D., Family Practice Resident; Judson B. Reaney, M.D., Pediatric Resident; and Susan Gillis Reaney, M.A., Slow Learning and Behavior Problems Teacher, Children's Health Center, University of Minnesota, 2525 Chicago Avenue, Minneapolis, Minnesota 55404.
Purpose: To study the effects of autosuggestion on the reading ability of dyslexic children while attempting to control as many variables as possible.
Subjects: 20 experimental subjects and 20 controls, ages 9 to 10, in the 4th grade of the Minneapolis Public School System. All children were middle class as determined by the Hollingshead 2-Factor Index of Social Position.

Methods: Subjects and controls were matched on the basis of sex, general intelligence, and severity of disability. They had the same instructors who used similar teaching techniques. Technique I: Pretherapy. All subjects and controls received routine psychometric and educational testing by school psychologists and psychometricians as well as assessments by parents and teachers. Self-esteem was assessed by a psychologist using tests such as Piers-Harris Children's Self-Concept Scale, and Holtzman Inkblot Technique, Forms A and B. Technique II: Therapy. All experimental subjects attended visual imagery training sessions conducted by the investigators once a week for 4 weeks and biweekly for two further sessions. Instruction was given in small groups. Subjects were taught an appropriate relaxation technique. Once in the relaxed state, they were taught an appropriate visual imagery method; e.g., they were asked to visualize a television screen on which they see themselves reading a book. It was then suggested that they see themselves reading well and finding it very pleasurable. They were asked to practice this technique and give themselves these same suggestions each day. Parents and teachers were not involved in therapy, and teachers did not know the experimental or control group assignments. Controls came out of the classroom at the same time as experimental subjects for discussion groups to minimize differences in the two groups based on differences in attention by the researchers.
Duration: September 1976-August 1977.

38-QG-1 EDUCATION FOR PARENTHOOD—THE BOY SCOUTS OF AMERICA PILOT

Investigator(s): Ivan B. Stafford, Ed.D., National Coordinator, The Educational Thrust, Boy Scouts of America, North Brunswick, New Jersey 08902.
Purpose: To test whether or not content material, based on the Education for Parenthood curriculum—Exploring Childhood—can be introduced into the Boy Scout program at all levels.
Subjects: Boy Scouts of all levels from the pilot council in River Edge, New Jersey and from demonstration areas throughout the United States. Cub scouting includes boys, ages 8 through 10; boy scouting includes boys 11 through 18; and explorer scouting includes boys 15 through 21.
Methods: Using the activities of the pilot council (Bergen Council, River Edge, New Jersey) and through 35 to 50 demonstration areas throughout the United States, materials and program structures for the transmittal of information were tested. The basic subjects were Family Life and Preparation for Parenting. Also, materials were introduced that examine what it means to be a parent in today's world, family problems, and solutions to the problems.
Findings: Findings indicate that this kind of material fascinates young people and that they readily adopt a peer-to-peer working relationship with the curriculum. Plans for implementing the program throughout the United States include expanding leadership training materials and encouraging association with organizations that can provide content for local outlets.
Duration: June 1973-December 1976.
Cooperating group(s): (1) Salvation Army. (2) Save the Children Federation. (3) National Federation of Settlements and Neighborhood Center. (4) Girls Scouts of the U.S.A. (5) '-H. (6) Boys Clubs of America.

SOCIAL SERVICES

38-RA-1 ASSESSMENT OF SERVICES FOR VISUALLY HANDICAPPED CHILDREN

Investigator(s): Milton Gottesman, Ph.D., Project Director; and Haeja Kim, Research Assistant, Welfare Research, Inc., 112 State Street, Albany, New York 12207.
Purpose: To identify service needs of visually handicapped children statewide; and to investigate the range of services provided and projecting costs for development of needed services.
Subjects: A 15 percent sample (350) of the total population of all legally blind children, under age 21, in New York State.
Methods: Children will be surveyed by conducting interviews. Agencies which serve blind children will be mailed questionnaires, and where necessary, interviews will be conducted to obtain information.
Duration: February 1976-January 1977.
Publications: Results will be published by Welfare Research, Inc. and/or New York State Department of Social Services.

38-RE-1 DECISION MAKING IN FOSTER CARE

Investigator(s): Theodore J. Stein, D.S.W., Lecturer; Eileen D. Gambrill, Ph.D., Associate Professor; and Kermit T. Wiltse, D.S.W., Professor, Department of Social Welfare, University of California, Berkeley, California 94720. Address correspondence to: Dr. Stein, Children's Home Society, 3200 Telegraph Avenue, Oakland, California 94609.
Purpose: To develop a decision making framework used by child welfare workers to provide continuity in care for children in out-of-home placement.
Subjects: 427 children, ages 0 to 16, who were dependents of the Alameda County Court System. Sex and ethnicity were equally distributed across experimental and control groups.
Methods: The basic design was a comparison between experimental and control groups. Cases consisted of children who had been in foster home care for a number of years as well as new intake, who were randomly assigned to experimental and control units. Experimental workers were trained in the use of sociobehavioral methods for intervention: no procedural changes occurred in the control unit. A number of research instruments was developed to gather data on various facets of the project. Some examples of areas in which data were gathered by all workers on a monthly basis included (1) the decision status of each child (e.g., to be restored to natural parents, to be referred for adoption, etc.); (2) the reason for any decision, frequency of contacts, and person with whom contact was made (e.g., natural or foster parent, child or collateral resource); and (3) problems identified on each case and the predominant casework treatment methods used. Direct observational data on parents and children were commonly collected by experimental workers, and a random sample of interviews with clients was tape recorded. Written contracts were used with a majority of clients in experimental cases. Since the project has just ended, statistical analysis is not yet complete for the 2 years. It is expected that chi-square and "z" test for between group differences will be run where ap-

propriate. Correlation, and factor analysis if appropriate, will be utilized to identify variables that might be predictive of differential case outcomes.

Findings: At the end of the first year, 71 percent of the experimental unit vs. 52 percent of the control children were headed for movement out of foster care either through restoration to natural parents, adoption, or legal guardianship. Analysis of three-fourths of the second year's data suggests that these differences are even more pronounced.

Duration: April 1974-March 1976.

Cooperating group(s): (1) Alameda County Department of Social Services. (2) Children's Home Society, Oakland, California. (3) San Francisco Foundation and State Title IV funds.

Publications: (1) Stein, T. J.; Gambrill, E. D.; and Wiltse, K. T. Dividing case management responsibility between two workers. *Child Welfare* (in press). (2) Stein, T. J.; Gambrill, E. D.; and Wiltse, K. T. Early intervention in foster care. *Public Welfare,* Spring 1976, 34(2). (3) Stein, T. J.; Gambrill, E. D.; and Wiltse, K. T. Behavioral techniques in foster care. *Social Work,* January 1976, 21(1). (4) Stein, T. J.; Gambrill, E. D.; and Wiltse, K. T. Foster care: The use of contracts. *Public Welfare,* Fall 1974, 32(4). (Reprinted in *Foster Care,* a publication of the Office of Child Development, U.S. Department of Health, Education, and Welfare, 1975). (5) Stein, T. J. and Gambrill, E. D. (Eds.) *A manual for training social workers in decision making and case management.* Community Administration, U.S. Department of Health, Education, and Welfare: Grant Number 85-P-96602-01.

38-RE-2 TRAINING FOSTER PARENTS AS MENTAL HEALTH WORKERS

Investigator(s): John M. Flynn, Ed.D., Director, Living and Learning Center, Nova University, 3301 College Avenue, Davie, Florida 33314.

Purpose: To develop a replicable model to select, train, and supervise foster parents to deal with disruptive and disturbed adolescents.

Subjects: Prospective and current foster parents, ages 25 to 55, of both sexes.

Methods: The research design includes group comparisons with populations of parents being trained, screened, and provided follow-up services. A control group has received the services currently provided by the agency. A number of data collection instruments are being developed, both for the screening component of the program and the maintenance of the follow-up services. The instruments will include traditional screening instruments, behavioral check sheets, frequency charts, etc.

Duration: July 1975-June 1980.

Cooperating group(s): (1) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) Broward County Mental Health Board. (3) State of Florida, Division of Health and Rehabilitative Services.

Publications: Data and results will be available through workshops and presentations during the first 3 years.

38-RF-1 THE IMPACT OF TITLE XX AND THE NEW YORK CITY BUDGET CRISIS ON DAY CARE IN NEW YORK CITY

Investigator(s): Michael J. Smith, M.S.W., Research Associate, Community Service Society, 105 East 22nd Street, New York, New York 10010.

Purpose: To examine how Title XX has been implemented in a particular locality for a particular service, and within the context of a municipal budget crisis.
Subjects: Experts in the field of day care in New York City including administrative and service staffs from local day care centers, staffs from state and city agencies that administer day care funds, and staffs from various groups concerned with the impact of reduction in day care. The sample also includes some families that have lost day care service as a result of Title XX or the budget crisis.
Methods: One-hour semistructured interviews were conducted with two or more experts in each of the above categories. In addition, more structured interviews were conducted with familes out of service because of Title XX or the budget crisis.
Findings: Although a large number of families in New York was expected to lose day care as a result of Title XX and the budget crisis, a smaller number of families actually left. Those that opted out of day care did so mainly because they did not wish to pursue a fair hearing procedure.
Duration: April 1976-October 1976.
Publications: A report published by the Community Service Society is planned.

38-RF-2 NEW YORK CITY INFANT DAY CARE STUDY

Investigator(s): Mark Golden, Ph.D., Principal Investigator; and Henry J. Policare, Co-Project Director, Medical and Health Research Association of New York City, Inc., 40 Worth Street, New York, New York 10013; Margaret T. Grossi, M.D., Assistant Commissioner, Maternal and Child Health; and Louis Frankfort, Executive Director, Agency for Child Development, New York City Health Department, 855 Central Avenue, Albany, New York 12206.
Purpose: To assess the effects of a child's experience while in infant day care, in group vs. family infant day care programs, and length of time in an infant day care program on the child's psychological development; his health, growth, and nutrition; and family development.
Subjects: 180 infant day care children, who entered an infant day care program between ages 2 and 21 months and were followed until age 3; and 75 children, seen at age 3, who were just entering day care and had been reared at home.
Methods: The data were collected through naturalistic observations of the children in their day care setting, standard psychological testing using the Bayley Scales of Infant Development and the Stanford-Binet Intelligence Scale, pediatric examinations, and interviews with the family. At age 3, several psychological rating scales were used during the Binet, a play session with the child, and observation. The scales were developed by project staff for this purpose. The interdisciplinary nature and multivariate design of the study will provide an opportunity to address many issues that are of concern in the areas of child development and day care, including some assessment of the impact of the environment provided by the day care program.
Duration: February 1971-June 1977.
Cooperating group(s): (1) Division of Research; Maternal and Child Health Service; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) Carnegie Corporation. (3) Office of Child Development; Office of Human Development; U.S. Department of Health, Education, and Welfare.
Publications: Rosenbluth, L. *et al.* New York City infant day care study. *American Journal of Public Health,* November 1975, 65(11).

38-RF-3 EVALUATION OF FAMILY DAY CARE

Investigator(s): Edith Fein, M.A., Acting Director of Research, Child and Family Services of Connecticut, Inc., 1680 Albany Avenue, Hartford, Connecticut 06105.
Purpose: To determine which aspects of the Child and Family Services Family Day Care Program (home care, nursery school, enrichment, home visiting, verbal interaction education, parent discussion groups, family counseling) are associated with successful day care outcomes.
Subjects: All children placed in the program, the majority of whom are under 6 years old.
Methods: Measurements used to evaluate the programs are (1) a pre- and postadministration of an adaptation of the Denver Developmental Scale filled out by mothers, (2) a pre- and postadministration of an adaptation of the Fischer-Turner Social Service Issues, (3) an adaptation of Lindenthal's Life Events measure, (4) a measure of client expectations on entering the program and a postmeasure of client satisfaction, (5) an adaptation of the problem oriented record, and (6) *ad hoc* questionnaires and interviews to evaluate mothers' training sessions, discussions groups, etc.
Duration: October 1975-continuing.

38-RG-1 THE STRATHCLYDE PROJECT FOR EDUCATIONAL DISADVANTAGE

Investigator(s): J. Eric Wilkinson, B.Sc., Dip.Ed., M.Ed., ABPs.S., Lecturer, Department of Education, Glasgow University, 1 Lilybank Gardens, Glasgow, Scotland.
Purpose: To harmonize the socializing influences of family, community, and school for the educational benefit of the children.
Subjects: 516 families with 200 children, ages 0 to 8, who reside in a small community.
Methods: The research will attempt to assess the changes occurring in the family, school, and community as a result of the intervention of two home visitors, one preschool coordinator, and one literacy worker. The main statistical method used will be analysis of covariance.
Findings: Mothers of disadvantaged families are very willing to join small group discussions.
Duration: May 1976-April 1979.
Cooperating group(s): (1) Scottish Education Department. (2) Notre Dame Educational Trust. (3) Strathclyde Regional Council.
Publications: Wilkinson, J. E. and Murphy, M. Differential methods of enhancing cognitive growth of urban preschool children. *Child Care, Health, and Development,* 1976, 2, 1-11.

38-RH-1 SURVEY OF NURSES IN NEW JERSEY

Investigator(s): Maureen McCabe, R.N., Training Coordinator, Protective Services Resource Institute, Rutgers Medical School, P.O. Box 101, Piscataway, New Jersey 08854.
Purpose: To determine the level of knowledge about child abuse and neglect among hospital nurses.
Subjects: 100 nurses: four from each of 25 hospitals throughout New Jersey. Subjects represented pediatrics, obstetrics, emergency room, and outpatient departments.

Methods: A personal interview was conducted using a standardized questionnaire developed at the Protective Services Resource Institute. The survey attempted to determine what type of formal training was received by the nurses.
Duration: June 1976-August 1976.
Cooperating group(s): (1) U.S. Department of Health, Education, and Welfare. (2) New Jersey Division of Youth and Family Services. (3) Rutgers Medical School, College of Medicine and Dentistry of New Jersey.
Publications: Data and results are available from the Protective Services Resource Institute.

38-RH-2 TEXAS MIGRANT COUNCIL CHILD ABUSE AND NEGLECT PREVENTION PROJECT

Investigator(s): Abdon Ibarra, Jr., Project Director, Texas Migrant Council, Inc., P.O. Box 917, Laredo, Texas 78040.
Purpose: To demonstrate and research the feasibility of continuous service delivery to migrant families with child abuse and/or neglect problems by following these families to their northern work sites.
Subjects: Children, ages 0 to 18, of approximately 13,000 migrant families. The families were identified with abuse/neglect problems, averaged 6.5 children, and migrated interstate.
Methods: The project follows migrant families to the northern user states to provide services and therefore insures continuous contact with the abusing families. Primary consideration is given to lifestyle and cultural uniqueness of the sample population.
Findings: Migrant families have more neglect than abuse problems.
Duration: July 1975-June 1978.
Cooperating group(s): National Center on Child Abuse and Neglect; Office of Child Development; Office of Human Development; U.S. Department of Health, Education, and Welfare.

38-RH-3 SAN ANTONIO CHILD ABUSE/NEGLECT RESEARCH PROJECT

Investigator(s): Dario Chapa, M.A., Project Director; Tony Garcia, Ph.D., Research Analyst; and Raul B. Valdez, M.S.W., Project Researcher, Mexican-American Neighborhood Civic Organization, 2811 Guadalupe Street, San Antonio, Texas 78207.
Purpose: To determine any significant relationship between child abuse/neglect and alcohol/substance abuse.
Subjects: 1,200 male and female parents of children, ages 16 to 50. The sample includes Mexican-Americans, Anglos, and Blacks.
Methods: A comparison/contrast design is being used. Data are collected with an instrument developed by project staff that will sample a random stratified segment of Mexican-American, Black, and Anglo populations in an urban environment. Treatment of data will include frequency run, X^2 analysis, analysis of variance, and factor analysis.
Duration: June 1975-June 1978.
Cooperating group(s): (1) Texas Department of Public Welfare. (2) San Antonio Mental Health and Mental Retardation. (3) San Antonio Department of Public Welfare, Unit of Child Protective Services. (4) University of Texas, School of Social Work. (5) Office of Child Development; Office of Human Development; U.S. Department of Health, Education, and Welfare.
Publications: Information will be available from the Office of Child Development.

38-RH-4 PROJECT CARE (CHILD ADVOCACY RESOURCES EXPANSION)

Investigator(s): Michael Marley, M.S.W., Director, Project CARE, Brooke Army Medical Center, Fort Sam Houston, P.O. Box 66, San Antonio, Texas 78234.
Purpose: To demonstrate the effectiveness of Community-Army-Air Force-Welfare Department planning to provide a broad spectrum of services to military familes for the prevention, diagnosis, and treatment of child abuse and neglect.
Subjects: Active duty and retired military families in Bexar County.
Methods: A multidisciplinary staffing model will be designed and implemented. A coordinated system of services for child advocacy will be conducted including home visits; ongoing social work counseling; parenting education; seminars for professionals, students, and child care workers; expansion of secondary services; a public awareness campaign; incidence research; and formal social policy study in accordance with the model developed by Gil. Formative and summative evaluation of the project will be made regularly by an independent agency. Many programs have been initiated for children and families. Others have been planned and negotiated.
Findings: After 1 year, Project CARE has made significant contributions to the existing service delivery systems in San Antonio. In many areas expansion into areas not originally anticipated has occurred. The liaison between the military and civilian service deliverers will expand as the project enters its second year.
Duration: July 1975-June 1978.
Cooperating group(s): (1) National Center on Child Abuse and Neglect; Children's Bureau; Office of Child Development; Office of Human Development; U.S. Department of Health, Education, and Welfare. (2) Five Air Force and Army installations. (3) Two military medical centers. (4) Department of Public Welfare, Region 4. (5) Special Projects Bureau.
Publications: Proposed journal article on demography and incidence of military child abuse is pending. Data will be available through annual project reports.

38-RH-5 FAMILY-COMMUNITY INTERVENTION: ABUSE AND NEGLECT

Investigator(s): Paul H. Glasser, Ph.D., Professor; and Charles Garvin, Ph.D., Professor, School of Social Work, University of Michigan, 1065 Frieze Building, Ann Arbor, Michigan 48109.
Purpose: To study social factors in child abuse and neglect that are crucial to a successful intervention program; and to integrate psychological variables with sociological and social-psychological factors relevant to an effective and efficient change plan.
Subjects: 175 experimental and 100 control families.
Methods: The experimental and control families will be interviewed in a large city, a medium-size city, and a rural area. The experimental families have all been suspected of abuse and neglect by the Michigan Department of Social Services. The control families are under no suspicion.
Duration: September 1975-December 1979.
Cooperating group(s): Michigan Department of Social Services.

38-RH-6 THE EFFECTS OF STRESS UPON PARENTAL PUNITIVENESS

Investigator(s): Richard H. Passman, Ph.D., Assistant Professor, Department of Psychology, University of Wisconsin, Milwaukee, Wisconsin 53201.

Purpose: To evaluate the effects of various forms of stress induced in the laboratory upon the intensity of punishment used by parents against their children.
Subjects: Mothers of children, ages 4 to 8, half boys and half girls.
Methods: The research is intended as a preliminary investigation into the causes of child abuse. Mothers received stressors, which were either directly associated with their children's actions or independent of them, while they were monitoring their children's behaviors on a learning task. Mothers punished their children's errors on the task by removing zero through nine candies from a supply given the children. The design was a within-subjects design, in which the subjects served as their own controls, and the data were analyzed using analysis of variance.
Findings: Both child-dependent and child-independent stress lead to increased intensities of punitiveness compared to nonstress situations.
Duration: May 1975-continuing.
Cooperating group(s): Midwest Institute on Drug Use, Milwaukee, Wisconsin.

38-RI-1 AN EVALUATIVE STUDY OF THE DESTITUTE CHILDREN IN MAHARASHTRA

Investigator(s): Mandakini Khandekar, M.A., Dip.S.S.A., Head, Unit for Study of the Urban Child and Youth, Tata Institute of Social Sciences, Sion-Trombay Road, Deonar, Bombay 400 088, India.
Purpose: To critically assess the working of the institutions in the State of Maharashtra, India, aided under the Scheme for the Welfare of Destitute Children.
Subjects: Nine institutions in Maharashtra (all receiving aid).
Methods: Data will be collected through interview schedules, discussions with persons in charge of the institutions, and observation of the institution at work. Schedule A includes names, background information, programs, physical plant and facilities, services, management of children, and financing the program for destitute children. Schedule B is an analysis of the organization structure, and Schedule C gathers data about the children.
Duration: August 1976-January 1977.
Cooperating group(s): Department of Social Welfare, Government of India, New Delhi.
Publications: Data and results are available from: Director, Tata Institute of Social Sciences.

HEALTH SERVICES

38-SA-1 PREVENTIVE AND EPISODIC CARE OF INNER-CITY CHILDREN

Investigator(s): Sam Shapiro, B.S., Director, Health Services Research and Development Center; and Pearl S. German, Sc.D., Director, Community Studies, Johns Hopkins Medical Institutions, Johns Hopkins University, 624 North Broadway, Baltimore, Maryland 21205.

Purpose: To investigate the health care and behavior of groups within the East Baltimore Community (a disadvantaged inner-city population) who utilize different systems of health care; and to assess the impact of a relatively new Health Maintenance Organization in the area.

Subjects: A stratified, random sample of all households within a 12 census tract area surrounding the Johns Hopkins Hospital.

Methods: A household survey was conducted supplemented by a chart review of two pediatric and two adult conditions.

Findings: In the study, a large majority of children of school age (age 6 and over) were immunized; however, only about half the children under age 6 were immunized. There were high proportions immunized among those under 6 but enrolled in day care programs. High proportions with earaches receive care; less receive preventive care.

Duration: December 1973-September 1976.

Cooperating group(s): (1)National Center for Health Services Research; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) Johns Hopkins Medical Institutions. (3) East Baltimore Medical Plan.

38-SA-2 BLOOD REFERENCE VALUES IN CHILDREN

Investigator(s): Louis Munan, M.Sc., Associate Professor; and Anthea Kelly, M.D., Assistant Professor, Department of Epidemiology; and Claude Petitclerc, M.D., Associate Professor, Department of Biochemistry, Faculty of Medicine, Centre Hospitalier Universitaire, Sherbrooke, Quebec, Canada J1H 5N4.

Purpose: To develop biochemical and hematological values in pediatric age groups by age and sex for use as references or for diagnostic purposes; and to study the relationship of such values to biosocial variables.

Subjects: 2,500 girls and boys, over age 10, selected from a noninstitutionalized population by a statistical probability scheme.

Methods: Home interviews and blood collections are conducted. A standardized questionnaire is administered by a nurse who surveys the subjects on age, sex, occupation, education, family size, medical history, smoking, alcohol, medications, ethnicity, height, weight, physician visits, etc. Serochemical analysis is conducted by automated systems, and data analysis, by both parametric and nonparametric methods.

Findings: Part of the analysis of reference values on serum urate, serum calcium, serum protein, and red cell indices in early adolescent years is co[illegible]ed and published. (See Publications below.)

Duration: 1973-1978.

Cooperating group(s): National Health and Welfare, Ottawa, Canada.
Publications: (1) *British Journal of Hematology,* January 1977. (2) *American Journal of Epidemiology,* 1976, 103, 369. (3) *Clinical Chemistry,* October 1976.

38-SA-3 EPSDT: EVALUATION OF OUTCOME AND ATTITUDES

Investigator(s): Ellen M. Naor, M.A., Research Analyst, Wisconsin Bureau of Health Statistics. Address correspondence to: Richard Biek, M.D., Director, Bureau of State/Local Relations, Wisconsin Division of Health, P.O. Box 309, Madison, Wisconsin 53701.
Purpose: To assess the feasibility of evaluating referral follow-up and outcome on a retrospective basis; and to pilot test instruments for measuring attitudes of screeners, providers, and clients.
Subjects: 132 children screened in Waupaca County, Wisconsin between April 1974 and June 1975 and referred for further health care. Waupaca is a medium size county typical of many in Wisconsin.
Methods: Screening agency records were reviewed to determine reasons for referral for further health care, referral destination, outcome of referral carried out or not, time lag between screening and first visit to provider, provider's diagnosis, and treatment, if any. Providers were contacted directly to confirm diagnosis and treatment information. Attitudes were assessed in a telephone interview using a brief questionnaire.
Findings: Forty-five percent of all referrals resulted in visits to providers of diagnosis and treatment; 74 percent were carried out within 60 days; and 87 percent of those seen by a provider needed treatment. Record review took 15 minutes or less for the majority of cases. Twenty-five providers were interviewed. Responses were supportive of the program.
Duration: August 1975-March 1976.
Cooperating group(s): (1) Wisconsin Bureau of State/Local Relations. (2) Waupaca County Health Service, Waupaca County Department of Social Services.
Publications: Naor, E. M. Referral outcome and attitudes to EPSDT. Waupaca County Pilot Study, 1974-1975. Madison, Wisconsin: Division of Health, March 1976.

38-SA-4 A FOLLOW-UP STUDY OF CHILDREN HANDICAPPED AT BIRTH

Investigator(s): Lorraine V. Klerman, Dr.P.H., Associate Professor, Heller Graduate School, Brandeis University, Waltham, Massachusetts 02154; Joel J. Alpert, M.D., Department of Pediatrics, Boston City Hospital, 818 Harrison Avenue, Boston, Massachusetts 02118; and Kishor Mehta, M.D., Department of Pediatrics, Framingham Union Hospital, Framingham, Massachusetts 01701.
Purpose: To examine the services that children born with handicapping conditions receive between birth and their third birthday; and to establish the degree of association of particular characteristics with the incidence of specific handicapping conditions.
Subjects: All children born during a 12-month period at an inner city hospital (N = 1,750) and at a suburban hospital (N = approximately 1,600); and a subsample of these children who met the study criteria for handicapped based on presence of specific abnormalities or factors that pose a risk to the child's health (N = 520).
Methods: A medical record abstract is being utilized to identify the subsample of handicapped children and to provide data for an epidemiological profile of the entire year of

births. A household interview is being conducted with the mothers of the subsample children in order to document their health care experience during the first 3 years of life. Records from institutions utilized by the children are being reviewed for an assessment of the quality of care received. Comparisons will be made across social class and geographic entities.

Findings: At the inner city hospital, 520 children (30 percent of the year's births) were identified for the subsample. Of these, approximately 44 percent had major or moderate abnormalities. 35 percent were at risk because of medical problems of the infant, and 21 percent were at risk because of medical problems of the mother.

Duration: September 1975-August 1977.

Cooperating group(s): (1) Division of Research; Maternal and Child Health Service; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) Bureau of Community Health Services; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

38-SA-5 LONG-TERM FOLLOW-UP OF INFANTS WITH CRITICAL CONGENITAL HEART DISEASE

Investigator(s): Donald C. Fyler, M.D., Associate Chief, Cardiology; and Annette R. Silbert, Ph.D., Research Associate, Psychiatry, Children's Hospital Medical Center, 300 Longwood Avenue, Boston, Massachusetts 02115.

Purpose: To evaluate comprehensively the development of New England Regional Infant Cardiac Program patients who were identified in the first year of life as having a congenital heart defect; and to estimate their quality of life.

Subjects: 1,000 male and female survivors of the 2,250 babies suspected of congenital heart defect, who entered 11 major New England medical centers in their first year of life. The subjects will be seen in the follow-up study sometime between ages 5.6 and 6.3. No satisfactory controls are available. Approximately 50 children entered the program who were found to have no significant heart disease or were suffering from a respiratory defect. They were also evaluated and will serve as a comparison group.

Methods: Each child and his parents are seen individually in a pleasant, nonmedical setting. Testing locations have been established in major New England cities. A semistructured interview of the parents is conducted by the chief psychologist, while the child is examined in a kindergarten room. Sociological, family background, developmental history, and a description of the child's behavior are obtained. Upon completion of the interview, the chief psychologist administers to the child gross motor tests and a short projective story completion test. A battery of standardized psychological tests is administered, which samples various cognitive, fine, and gross motor abilities, and screening tests of vision and articulation are administered. Norms are available for all of these tests. Height and weight measurements are taken. The unique features of the project include (1) Location of testing: Kindergarten rooms of synagogues, churches, and child study centers furnish pleasant nonthreatening surroundings. (2) Consistency of administration: A small staff, two workers in tandem, see all the children in the New England centers and collect a large bank of medical data on each child who has been followed since admission to the program. (3) Timing of evaluation: The evaluation coincides with the beginning of the school career, making the results of practical value to parent and school if requested. (4) Clinical report: Based on the data collected, analyzed, interpreted, and written by the chief psychologist, a report is sent to an attending cardiologist with recommendations if indicated. Parents learn results from the cardiologist

All necessary data are coded for a computer. Statistical methods include frequency distributions, correlations, and multivariate analysis. Data from the developmental evaluation will be correlated with medical data on each patient.

Findings: Preliminary results show that the group tested to date has a normal IQ distribution, with poorer performance related to low social index, sex, history of cyanosis, presence of symptoms, and associated extracardiac anomalies.

Duration: July 1972-June 1980.

Cooperating group(s): (1) Hartford and St. Francis Hospitals, Hartford, Connecticut. (2) Yale-New Haven Hospital, New Haven, Connecticut. (3) Maine Medical Center, Portland, Maine. (4) Boston Floating Hospital, Massachussetts General Hospital, and Children's Hospital Medical Center, Boston, Massachusetts. (5) Dartmouth-Hitchcock Medical Center, Hanover, New Hampshire. (6) Rhode Island Hospital, Providence, Rhode Island. (7) Mary Fletcher Hospital, Burlington, Vermont.

38-SA-6 CHILDREN, AGES 10 TO 12, WITH CONGENITAL RUBELLA SYNDROME

Investigator(s): Murdina M. Desmond, M.D., Professor of Community Medicine and Pediatrics and Director, Meyer Center for Developmental Pediatrics; and A. L. Vorderman, M.D.; H. G. Schaffer, M.D.; L. Andrew, M.D.; F. I. Catlin, M.D.; T. E. Zion, M.D.; D. G. McNamara, M.D.; and G. K. Von Noorden, M.D., Staff Members, Baylor College of Medicine and Texas Children's Hospital, 6621 Fannin Street, P.O. Box 20269, Houston, Texas 77030.

Purpose: To evaluate, through a multidisciplinary approach, the current medical and educational status of children born in the Houston area with Congential Rubella Syndrome during the epidemic of 1964-65, in order to determine factors operative in initial illness which may have contributed to present outcome; and to plan for future care and education.

Subjects: 55 girls and 45 boys, ages 10 to 12, born with Congenital Rubella Syndrome during the 1964-65 epidemic, who have been followed developmentally at Texas Children's Hospital.

Methods: Each child will be given a physical examination with appropriate laboratory procedures and indicated consultations. A developmental testing battery will be administered by the multidisciplinary staff of the Meyer Center for Developmental Pediatrics. The children will be tested in intellectual functioning, perceptuo-motor, and speech and language areas. The educational history and the impact of the child upon the family will be reviewed. A family conference will be held to discuss evaluation results, implications, and recommendations.

Duration: January 1976-January 1979.

Cooperating group(s): (1) Lillian Kayser Lewis Foundation. (2) Hamman Foundation.

38-SC-1 SURVEY OF DENTAL HEALTH IN NORTH CAROLINA

Investigator(s): James W. Bawden, D.D.S., M.S., Ph.D., Professor, Department of Pedodontics, School of Dentistry; and John T. Hughes, D.D.S., Ph.D., School of Public Health, University of North Carolina, Chapel Hill, North Carolina 27514; and E. A. Pearson, D.D.S., Dental Division, North Carolina Department of Human Resources, Raleigh, North Carolina.

Purpose: To determine the status of dental health in the North Carolina population; and to estimate dental care services delivered.

Subjects: 1,200 households selected through a random stratified sampling procedure.

Methods: Households were visited and all occupants were examined by dentists. Standard indices were used to produce dental scores. Examiner judgment was supported by the development of specific diagnostic criteria. Social data, which included occupation, education, and income, were also gathered.
Duration: June 1976-June 1978.
Cooperating group(s): (1) North Carolina University, Health Services Research Center. (2) Dental Foundation of North Carolina.

38-SD-1 THE IMPACT OF INTENSIVE CARE ON NEONATAL MORTALITY

Investigator(s): Joseph L. Lyon, M.D., Assistant Professor; and F. Ross Woolley, Ph.D., Assistant Professor, Department of Family and Community Medicine; and A. L. Jung, M.D., Associate Professor, Department of Pediatrics, College of Medicine, University of Utah, 50 North Medical Drive, Salt Lake City, Utah 84132.
Purpose: To evaluate the effects which the establishment of a regional intensive care center had on reducing neonatal mortality within the state of Utah; and to develop a protocol, or sets of guidelines, that can be used by physicians in determining whether children should be transferred to the intensive care center and preparations that should be made prior to transfer.
Subjects: Approximately 4,700 neonates, under 28 days of age, born in the state of Utah from July 1, 1973 through June 30, 1975.
Methods: Data for this study are being collected by abstracting medical records using standard abstract forms and establishing a risk index. The risk index has been used previously at the University of Colorado Medical Center. Two major analyses will occur: first, the relationship between mortality and the level of treatment received, controlling for risk; and second, a log-linear analysis or selected screening to determine those factors that are associated with survival.
Duration: July 1975-June 1977.
Cooperating group(s): Bureau of Community Health Services; Public Health Service; U.S. Department of Health, Education, and Welfare.
Publications: A final report will be submitted to the Bureau of Community Health.

38-SD-2 GENETIC SUSCEPTIBILITY TO SUDDEN INFANT DEATH

Investigator(s): Donald R. Peterson, M.D., M.P.H., Professor and Chairman, Department of Epidemiology, University of Washington, Seattle, Washington 98195.
Purpose: To systematically investigate the possibility of hereditary susceptibility to sudden infant death (SID) as suggested by anecdotal and epidemiological evidence; to determine the relative risk of SID episodes among monozygous and dizygous twin pairs in order to assess the imputed balance between heredity and environment as determinants; and to compare the incidence of SID among parental siblings of proband families with and without multiple incidents of SID occurrences in order to assess the likelihood of polygenic determinants.
Subjects: Parents throughout the United States who have experienced SIDS.
Methods: Participants are being requested to complete a questionnaire designed to elicit the data needed for this study. The questionnaire is designed to provide data on multiple occurrences with proposition families, occurrences in parental sibling families, and among twins.
Duration: July 1975-June 1978.
Cooperating group(s): National Foundation for Sudden Infant Death Guild for Infant Survival.

38-SD-3 MATERNAL AND CHILD CARE IN MAHARASHTRA

Investigator(s): Mandakini Khandekar, M.A., Dip.S.S.A., Head, Unit for Study of the Urban Child and Youth, Tata Institute of Social Sciences, Sion-Trombay Road, Deonar, Bombay 400 088, India.
Purpose: To determine the patterns of maternal and child care in Maharashtra in the light of various socioeconomic variables; and to analyze the National Sample Survey Organization's data on maternal and child care collected during its 28th round from October 1973 to June 1974 (Maharashtra data only).
Subjects: Stage I: 1971 Census villages in rural areas and blocks in urban areas. Stage II: sixteen households selected randomly in each village and block.
Methods: A stratified two-stage design was used. Stratification: India is divided into various States and Union Territories. The states are divided into districts, the districts into basic strata depending on their population in rural and urban areas. In Maharashtra, there are 36 basic strata, 624 villages, and 1,200 urban blocks. Data were gathered through eight schedules used for various purposes. Only parts of two schedules were of relevance to the topic selected for this study. Those schedules were taken for the secondary analysis which had data on either an expectant mother or a mother who had had a child during the year preceding the date of inquiry, or who had a child under age 3.
Duration: August 1976-April 1977.
Cooperating group(s): (1) Indian Council of Social Science Research, New Dehli. (2) Directorate of Economics and Statistics, Government of Maharashtra, India.
Publications: Data and results are available from: Director, Tata Institute of Social Sciences.

38-SD-4 EARLY AND PERIODIC SCREENING, DIAGNOSIS, AND TREATMENT DEMONSTRATION IN CHILD HEALTH

Investigator(s): Margaret T. Grossi, M.D., M.P.H., Director, Bureau of Child Health, New York City Department of Health, 125 Worth Street, New York, New York 10013; and Forest R. Williams, M.B.A., Director, Medical Assistance Program, New York City Department of Social Services, New York, New York 10013.
Purpose: To demonstrate and evaluate the cost effectiveness of individual early and periodic screening, diagnosis, and treatment (EPSDT) case finding, case monitoring, and developmental assessment techniques.
Subjects: 6,200 families on Medicaid residing in three zip code areas in South Bronx, New York City. The project will directly serve children, ages 0 to 5, in three New York City Health Department Child Health Stations located in the South Bronx.
Methods: Each of the three zip code areas feeds into one of the three child health stations. One clinic (zip code area) is a control sector; the remaining two will absorb experimental activities. In all cases, project employees will be providing services at existing New York City Health Departments or Department of Social Services sites. Because of the large proportion of Hispanic people residing in the target areas, all staff delivering direct services are bilingual. Variation on EPSDT operations in New York City will be demonstrated and formally evaluated using computer based techniques. Case finding: the use of a Public Health Nurse and a Case Aide to recruit eligibles into the EPSDT Program using interview methods vs. a mailing approach now employed will be compared. Effectiveness will be measured in terms of *shows for screening* appointments. Case monitoring: Case Monitors, clerical level employees, will be assigned to assure screening completions, resolution of referrals for abnormalities detected in screens, and

maintenance of appropriate screening schedules for a caseload of Medicaid children in the two study clinics. Effectiveness will be measured by rates of screening, rescreening, problem and case completion of Monitors' cases vs. those tracked by traditional methods. Developmental Assessment: A paraprofessional screener will perform a primary developmental assessment in the two study clinics. A physician will rescreen only those who demonstrate a developmental lag in the primary assessment. The effectiveness of this two-tier method (measured both objectively and subjectively) will be contrasted with a control operation with only a physician conducting the developmental evaluation. In all three components to be studied, patient demographic and medical data will be analyzed separately and in relation to demonstration findings.

Duration: July 1975-August 1977.

Cooperating group(s): (1) Office of Research and Demonstration; Social and Rehabilitation Service; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) New York State Department of Social Services. (3) Welfare Research, Inc., Albany, New York. (4) Medical and Health Research Association of New York City, Inc.

Publications: Data and results are available from Office of Research and Demonstration, Social and Rehabilitation Service.

38-SH-1 THE RELATIONSHIP BETWEEN THE DIETARY INTAKE OF CALCIUM, IRON, PHOSPHOROUS, AND PROTEIN AND BLOOD LEAD LEVEL IN CHILDREN

Investigator(s): Amanda McDonald, B.Sc.(H.Ec.), M.Sc., Graduate Student; and J. McD. Robertson, D.V.M., M.Sc.(Med), Associate Professor, Department of Epidemiology and Preventive Medicine, University of Western Ontario, London, Ontario, Canada N6A 5B7.

Purpose: To investigate the relationship between calcium, iron, phosphorous, and protein and blood levels in children.

Subjects: 235 boys and girls, ages 4 to 6, who reside in the older, low income housing areas of London, Ontario, and who could be exposed to lead-containing paint or plaster.

Methods: The dietary intake of each child for one 24-hour period was obtained from the child's mother. Information on pica was also obtained. Computer calculation of the nutrient intakes will be based primarily upon Agriculture Handbook No. 8 (U.S. Department of Agriculture). The blood lead level is being determined by atomic absorption spectrophotometry on a fingerprick blood sample. Linear regression and analysis of variance will be utilized in data analysis. This study was based on laboratory results that have indicated dietary deficiencies of calcium, iron, phosphorus, and protein, which are important in susceptibility to lead intoxication in animals.

Findings: Results on 100 of the 135 blood samples analyzed to date: (1) Blood lead level: Mean, 19.8 mcg/100ml; Range, 7-39 mcg/100ml. (2) Packed cell volume: Mean, 37.9 percent; Range, 31.3-41.5 percent.

Duration: September 1974-August 1977.

Cooperating group(s): (1) Department of National Health and Welfare, Canada. (2) Medical Research Council, Canada.

38-SH-2 EUROPEAN COMMUNITY STUDY OF THE EFFECTS OF AIR POLLUTION ON HEALTH

Investigator(s): Charles du V. Florey, M.D., Deputy Director, Department of Community Medicine, St. Thomas's Hospital Medical School, London S.E.1. 7EH, England.

Purpose: To determine the separate effects of atmospheric smoke and sulphur dioxide on the health of children.
Subjects: Approximately 25,000 school children, ages 6 to 10, both sexes, living in Belgium, France, Germany, Ireland, Italy, and the United Kingdom.
Methods: In each country, areas have been selected according to whether the annual averaging levels of smoke and SO_2 were high or low (>100 ug/m^3 or $<$ 50 ug/m^3), resulting in four combinations. Measurement of air pollution is made by local instruments and by instruments placed and maintained by the Commission of the European Communities. Health data are collected by interviews with parents. Peak respiratory flow rate, height, and weight are measured in the schools. Data are collected and transferred to punch cards by national teams and then analyzed at a single computer center.
Duration: 1974-1981.
Cooperating group(s): (1) United Kingdom Government, Department of Health and Social Security. (2) Commission of the European Communities.

38-SH-3 A CONTROLLED PROSPECTIVE STUDY INTO THE COGNITIVE AND BEHAVIORAL SEQUELAE OF SEVERE HEAD INJURY IN CHILDHOOD

Investigator(s): David Shaffer, M.B., M.R.C.P., M.R.C.Psych., D.P.M., Senior Lecturer in Child and Adolescent Psychiatry; and G. Brown and O. Chadwick, Research Workers, Institute of Psychiatry, 16 De Crespigny Park, Denmark Hill, London SE5 8AF, England.
Purpose: To examine behavior changes in a group of children on whom information is available on preaccident status; and to compare these with changes in a control group of children who have been involved in accidents not resulting in head injury.
Subjects: Children who have been in a coma an hour or more after an accident.
Methods: The research group obtains information on children who have been in coma for 1 hour or more, admitted to a number of London and Provincial hospitals after head injury. Parents are interviewed within a fortnight of injury to obtain information about behavior and adjustment during the period before the accident. Follow-up interviews and psychometric testing of the child is repeated at 4, 12, and 24 months after the accident. The structured interviews are used to obtain information on changes in behavior, childrearing practices, and family and marital adjustment. The school is contacted directly to gather data about social and scholastic progress.
Duration: October 1974-May 1979.

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Abstracts of Hospital Management Studies (quarterly), the Cooperative Information Center of Hospital Management Studies, University of Michigan, 220 East Huron Street, 419 City Center Building, Ann Arbor, Michigan 48108.

Abstracts on Criminology and Penology, Criminological Foundation, Rapenburg 38, Leiden, The Netherlands.

Communication Disorders, Information Center for Hearing, Speech, and Disorders of Human Communication, The Johns Hopkins Medical Institutions, 310 Harriet Lane Home, Baltimore, Maryland. 21205.

Current Awareness Service (monthly), the Institute for Research into Mental and Multiple Handicap, 16 Fitztroy Square, London WIP 5HQ, England. The service provides a listing of newly published journal articles; new books are listed every 2 months; and there is a monthly guide to forthcoming professional meetings in the field. Request a Publications List from Denise McKnight, Information Officer.

Current Index to Journals in Education (monthly), Macmillan Information, A Division of Macmillan Publishing Corporation, Inc., 216R Brown Street, Riverside, New Jersey 08075.

Dissertation Abstracts, University Microfilms, Ann Arbor, Michigan 48103. (Gives synopses of U.S. doctoral dissertations with an annual index.)

dsh Abstracts, Deafness, Speech and Hearing Publications, Gallaudet College, Washington, D.C. 20002.

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ERIC Clearinghouse on Early Childhood Education, Publications Office, 805 West Pennsylvania Avenue, Urbana, Illinois 61801, publishes a quarterly newsletter; subscription, $2.00. Also available free, a List of Publications relating to children, ages 0 through 12.

Exceptional Child Education Abstracts (quarterly), The Council for Exceptional Children, Box 6034, Mid City Station, Washington, D. C. 20005.

Excerpta Medica Foundation, New York Academy of Medicine Building, 2 East 103rd Street, New York 10029, and 119-123 Herengracht, Amsterdam C, The Netherlands, has established an abstracting service on pediatrics, available on a yearly subscription basis. In addition to abstracts, the Foundation provides to subscribers, at cost, photocopies and translations of complete articles.

Health Economic Studies Information Exchange, Division of Medical Care Administration, Public Health Service, Washington, D. C. 20402.

Index Medicus, National Institutes of Health. Order from Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

Language and Language Behavior Abstracts (quarterly), Center for Research on Language and Language Behavior, University of Michigan, Ann Arbor, Michigan 48104. Order from Subscription Manager, LLBA, Meredith Publishing Co., 440 Park Avenue South, New York, New York 10016.

National Bureau of Child Welfare Library (Voor Kinderbescherming), Stadhouderslaan 150, The Hague, The Netherlands, publishes abstracts of articles in the field of child welfare each month. The articles are in Dutch, but those familiar with the Universal Decimal System would be able to understand something about the articles. The subscription rate for documentation on cards is 30 guilders (approximately $8.40).

Nutrition Abstracts and Reviews, Commonwealth Bureau of Animal Nutrition, Bucksburn, Aberdeen AB2 9SB, Scotland.

Poverty and Human Resources Abstracts (bimonthly), Institute of Labor and Industrial Relations, University of Michigan-Wayne State University, P. O. Box 1567, Ann Arbor, Michigan 48106.

Psychological Abstracts, American Psychological Association, 1333 — 16th Street, N.W., Washington, D. C. 20036.

Rehabilitation Literature, National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois 60612.

Research in Education (monthly), Computer Microfilm International Corporation, P. O. Box 190, Arlington, Virginia 22210.

Science Information Exchange, Smithsonian Institution, 209 Madison National Bank Building, 1730 M Street, N.W., Washington, D. C. 20036 provides to qualified investigators, for a fee, selected abstracts of current research supported by foundation or government grants. The exchange covers such fields as medicine, nursing, public health, nutrition, psychology, education, anthropology, mental health, and intercultural relations.

Sociological Abstracts, 15 East 31st Street, New York, New York 10016.

Chicago Psychoanalytic Literature Index (quarterly). Institute for Psychoanalysis, 180 North Michigan Avenue, Chicago, Illinois 60601. Annual subscription: $50 postpaid ($55 outside U.S.).

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